The Builder.

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BRIDGEWATER HOUSE, a new residence for the Earl of Ellesmere, was long talked of, but through a variety of circumstances was not commenced till the month of July, in 1847. The carcase is now completed; the chimneys are being capped, the carving cleaned off: and we to-day lay before our readers an engraving of the west front,* and proceed to give them some particulars of the structure, premising, for the sake of our country friends, that it stands on the east side of the Green-park, adjoining the well-known Spencer-house, and that its south, or entrance front, is in Cleveland-row, so called from "that beautiful fury," Barbara, duchess of Cleveland, to whom the worthless Charles II. presented Berkshire-house, which formerly stood there.

The situation is one of the finest in the metropolis,—the view from the state rooms of the new house, over the park and towards Buckingham-palace, is perfectly beautiful, and, in point of locality, the house is not to be matched, including amongst its neighbours, together with the buildings already named, Stafford-house, the residence of the tasteful and excellent Duchess of Sutherland, St. James's Palace, and Marlborough-house.

The plan of the Bridgewater House approaches a square; the south front is 142 feet 6 inches, from east to west; and the west front, shewn by our engraving, 122 feet from north to south; and there are two small courts within the mass to aid in lighting the various apartments. It was originally proposed to erect a square tower at the north-east angle of the building, but this is abandoned, at least for the present, and probably without detriment to the effect of the building, excepting as seen from Piccadilly. The palace-residences of Rome and Venice furnish the general types for the elevations, skilfully combined in good proportions: the details are mostly very elegant, and the general effect good.

The projection of the wings, it will be observed, is very slight: the reticulated rustication of the coins is wide, and, being most carefully drawn, gives considerable richness without coarseness. It is by the careful outlining of every moulding, and the repeated study of every ornament, no matter where it is to be placed, that Mr. Barry succeeds in giving to all his buildings that degree of finish and completeness which distinguishes them. And we would here advise our younger readers to take a leaf out of the same good book. Don't be too soon satisfied, either with your first design for the whole, or your after drawings for the parts. Try again; weigh and compare; don't be afraid of time or trouble: blunders or bad taste in stone remain long to reproach and annoy. And, further, remember always what Michelangelo said to an acquaintance, who, finding him, some weeks after a statue had been apparently finished, still touching upon it, reproached him for wasting his time on trifles. This, or something like it, is what he said,—"My good friend, these trifles of which you speak, are the little matters which make all the difference between excellence and *perfection*; and perfection, surely, is *no trifle*."

The chimneys are brought to the angles, and made to form architectural features. The main cornice is very rich. The dolphins' heads in the corona are scarcely what they should be: they are too skull-like. The string-course under the two-pair windows, a folded ribbon, is very elegant. The dressings of the windows of principal floor include rich swags of flowers: the shield in each window-head displays two E's entwined *dos-à-dos*; and in the panel beneath is the suggestive but not very luminous motto of the Duke of Bridgewater, *Sic donec*.

The south elevation differs from the west in having no projections of the front wall, the rusticated coins at the extreme angles only, and a series of nine windows, exactly like those in the centre part of the west front. Vases surmount the dies of the balustrade. The entrance-porch, not yet built, will be in the centre, and be surmounted at the angles by similar vases. The whole of these fronts, and part of each of the other fronts, are faced with Portland stone.

In examining the interior of the building, when finished, one point will particularly force itself on the attention, and that is the care which has been taken so to plan it, that the freedom of access to his fine gallery of pictures, which Lord Ellesmere proposes to grant the public, may not be interfered with by the private requirements of the liberal owner. The ground-floor, 20 feet 6 inches high, contains within itself a perfect residence—drawing-room, dining-room, library, ladies' rooms, chamber and dressing-rooms, &c. The first floor, with the exception of part of the east front, is wholly appropriated to state rooms,—dining-room, drawing-rooms, and a picture gallery which will scarcely have an equal in the metropolis. Visiters will pass through the hall from the south entrance, and up the grand staircase (we hope this will be light enough, by the way) to this gallery, which is quite on the opposite side of the building, without in any way interfering or trespassing on the residence of the family.

The gallery occupies the whole of the north side of the house, and is carried out a few feet beyond the east wall of the ground floor, additional length being wanted, and the ground below being confined for the stable purposes. This extension is carried on stone landings and iron cantilevers, which come through at least 20 feet, and are there securely tied down.

The height of the gallery is 32 feet, and the width is the same. The roof is formed with iron principals, elliptical outside, with a horizontal tie about midway to form a flat ceiling inside, with coved sides, from which the gallery is lighted. The walls will be perfectly flat from the level of the dado up to the cornice, and in order that no hanging chandeliers may obstruct the view in any part, an arrangement will be made to illuminate the gallery at night, which is somewhat peculiar. A burner (probably gas) will be fixed *outside* each light in the cove with a strong reflector, by which means, further, the heated atmosphere consequent on the number of lamps required to shew the paintings properly will be avoided. A telescope tube will admit of the standards being put out of sight from within the gallery during the day, and avoid the obstruction of sun-light, and a gallery is formed externally to give easy access to them.

On the east side of the building previously referred to a mezzanine is introduced, which is appropriated wholly to the ladies' maids, and over this story are the washhouse and laundry. The accommodation and separation of the different classes of servants is a matter of some difficulty in a large establishment.

We will only further mention at present that air shafts and ventilating flues appear to be provided in abundance; that there is no timber bond or plates used; that the ground-floor is wholly arched with brickwork (4 inches in cement), and that the corridors both on the ground and first-floor, which promise to be successful in effect, are also vaulted with brickwork, instead of having the vaultings formed unreally, as is usually the case, with lath and plaster.

The Messrs. Baker are the builders employed, and we may mention that the work is being done, not by contract, but for agreed prices by measure.

The coachhouses will be on the east side of the residence, and the stables will be *above* them; the mode of access for the horses being an inclined plane.

The ground next the park front will be laid out as a garden in geometrical beds, with a terrace next the house paved ornamentally: and we have now probably said enough to shew that Bridgewater House promises to be both a commodious and noble residence, and a fitting receptacle for that important collection of works of art, in which, thanks to the liberality of its owner, the country at large will have an interest.

* See p. 451, in present number.

ON THE INFLUENCES WHICH TEND TO RETARD THE PROGRESS OF THE FINE ARTS.*

When we reflect how many thousands of pounds have been spent within these last few months on old paintings, and the length of time it takes under the ordinary patronage of modern art to disburse an equal amount, we cannot but deprecate to the utmost extent in our power this most unpatriotic procedure, especially when it is known how much is disbursed on the veriest rubbish, which cannot boast originality even in their canvass. It is, we consider, as culpable as that one should fill his conservatories with choice exotics, leaving all without that is indigenous to his native soil to waste and ruin. Is it at all probable that English art would have been in a more flourishing condition had the thousands or the hundreds of thousands that have been spent upon old masters been devoted to the encouragement of young scholars to become new ones?

To collect the curiosities and remains of the art of former times in museums or galleries may be well enough, but to surround oneself in daily life with such objects is nothing less than to abide in the tomb of the past. For our own parts we would prefer dwelling among those images which should laugh as they kept time to the jocund yet earnest steps of progress. Fashion, however, makes a sedate countenance,—for who dares to laugh at the tyrant?

Let us, then, since we have intrenched ourselves against antiquity, endeavour to remove this barrier against progress—for such we consider this propensity—to which the archæological taste, which has made so many converts of late years, is very nearly allied. This certainly may be serviceable to history, and afford lessons that we may profit by, but we believe it to be oftener detrimental to progress. It may be observed that the earth in past times was pervaded with a life differing in its features from the present, and when its circumstances changed, vitality also assumed new forms of being: think you that the petrifaction from which our inferences are drawn would be adapted to the new conditions of existence? So in the old world of human affairs the stratum of circumstances, and the ideas which

* See p. 434, *ante*.

were rooted in it, have undergone change. Ancient art, too, obeying the mutability of things, only leaves its fossil impression after it has performed its part; and if the real intention of archæology be the revival of the past, we predict that the attempt will be abortive: it will at most possess the feebleness incident to the imitator. In order to invest it with vitality we must again recall the spirit to the lifeless body, which we conceive to be utterly impossible. This, as all other fashions, must have its day, and clip the wings of progress; weariness, however, will come upon antiquarianism at last, and that spirit which for a time appears to retard, will but perhaps ensure in the end the universal conviction that all our energies must be directed forwards.

In briefly reviewing the various zones or lines of demarcation in society which constitute, in the aggregate, the public, it was found that in the lowest, all the education it receives is the discipline of evil influences, and no demand upon the fine arts emanates from it. From this melancholy condition we passed to consider the working class, in which such rapid advances in education have been made, and whence, there can be little doubt, a demand upon the arts would issue if means were devised for cheapening them by all worthy expedients.

In the next class that came under our consideration,—viz., the middle, we found an appreciation of the fine arts very general; the demand which it makes on them is the most considerable of any, yet its extent and character were both limited and lowered, to what it is conceived it might be, were it not for the striving after ostentatious displays.

And lastly, the aristocracy, in which this characteristic also prevailed, and to which may be added, as an aggravation, another of the follies of fashion, we mean the connoisseurship which can only affect to admire and purchase that which is beyond the means of the vulgar, which seems to partake very much of the feelings and consequential air of the schoolboy with his watch, more for show than any need he has of it. We see, then, that in the educated classes a taste for refined pleasures is observed—whether it be vital, or only that they feel they ought, for a similar reason that the waist of the English and the feet of the Chinese women are pinched, may create a doubt in the minds of some, but for our own part we lean to the latter hypothesis, and believe that the general routine of public education, though improved of late, is not, as yet, vital. It is directed more to the burdening of the memory than the development of the rational, and raising the æsthetic faculties.

What does the education in the fine arts amount to, in any class of the community, but to imperfect copying? Principles are, for the most part, quite out of the question; and what more is it than this that the aristocracy receive in particular, that it should assume the legislation of taste for others? There are numbers of the middle classes whose callings must necessitate a greater degree of practical knowledge in the arts.

We have never been able to discover that our great scholastic institutions have been famed for the instructions which they communicate in the arts; why, then, should the nobility assume superiority of judgment in this respect? The course of study which obtains the degree of connoisseur is something like the following:—To have attended, annually, sales of, and to be the purchaser of, old masters, Etruscan vases, Egyptian mummies, and Elizabethan furniture; to have inserted in one or two windows of the mansion, a few pieces of old painted glass, and halfway up its principal staircase may perhaps be seen a little ornamental painting, surrounding medallions or panels by Boucher, immediately over a niche containing a fragment of a Grecian statue on a carved pedestal of the Renaissance. Such are the conditions which render him eligible to committees, which, self-elected, legislate on matters of taste. The artist himself encourages this state of things, by assuming too much of the "Pollonius" bearing. Were the artists boldly to assert the undoubted right which they possess, as the most competent tribunal to legislate in these matters, the system might, in a short time, be crushed.

We should be much amazed if the same folly were exhibited in a parallel case. If a body of men *uneducated* as medical practitioners were called together to decide whether a medical man had treated a certain case in a judicious manner, we should not place much confidence in their decision—yet this is exactly the treatment to which the professed artist and the public tamely submit. Most men are supposed to know best what pleases them; and, in so far as these committees are considered the representative parliaments of public taste, we believe them faithful to their purpose. But if, on the other hand, they think they possess the talent to improve the painter, except by improving themselves, it appears very much like the pupil attempting to teach the master. If they knew their true position, and felt the humble spirit of learners, it might be beneficial to all: it would go far towards entertaining the notion of establishing professorships in the universities and great public schools, to which the most able artists would be called to take upon themselves the office of teachers. This would be, we conceive, the true way of raising the standard of taste; and while still responding to the demands of the public, there would be a mutual reaction tending to the advancement of both; as in all other branches of education, the master in raising the critical faculties of the pupil is himself compelled to move forwards, or hazard his title to respect.

In looking back to past ages, we feel that the arts must suffer while society is in a state of transition, broken up as it is into sects, and divided by bitter feelings. We say in looking back, we cast an anxious glance at the unity of feeling which pervaded society, "for (to use the words of a journalist), in the brightest periods of Grecian and Roman history, there was a distinct national life visible. There was an unmistakable national character brought out, educed from a system of training which owed its strength to a unity of faith, of race, and political objects. Society was simply constituted—there were none of the thousand springs of action which split up modern society into such numerous elements. There existed then, naturally, a standard traditional form—to the likeness of which, all good citizens should be moulded.

The whole inner man was to be brought out and developed in this shape. There was one national religion, one national morality,"* of which the artist was the illustrator and expositor. But let it be remembered that we sigh only for the unity of purpose, which we do not doubt there will be again—more powerful, more enlightened, and more lasting. Then will the arts attain their culminating point and be endowed with a new life. What has been said with regard to combined critics calling themselves committees of taste, is equally applicable to the occasional critics of the press—they, most of them, discover to those learned in such matters, that they are but shallow, and require to be taught, rather than to teach; they do no more, as one of the public, than to be expositors of public taste, and the flatterers of their particular friends. Artists are seldom misled by their opinions, directly; but doubtless they are to some extent, through their influence on public judgment.

It is not considered essential by many that he who assumes the authority of critic should have a practical acquaintance with the art he is to control. We believe, however, on the contrary, that in the highest fulfilment of such an office the most eminent artist would perform it best—the only doubt that could be raised is the probability of the effects of prejudice; but both the man of theory, and he who adds practice thereto, are equally liable to the same objection, which, if valid, would totally disqualify them for the censorship.

Freedom from prejudice, then, is absolutely demanded. When this condition is fulfilled, it is obvious that he who, to his perfect knowledge of the laws of the empire adds the constant practical observance of them, is best fitted to preside over it in the character of judge. There is, however, a delicacy of feeling which must prevent an artist, screened or otherwise, from acting in the public capacity of critic on his compeers. We have no doubt that incalculable mischief has arisen, that many a young artist and poet has been ruined, by a few printed lines of a spiteful critic, for they do not possess the charity of mercy; and the variety of ages and temperaments is disregarded, which ought to be intimately known before reproof is administered. The young require a different admonition to the old. The conceited must be humbled—the diffident encouraged—the rash curbed: these are circumstances concerning the reviewed which cannot, for the most part, be known to the journalist. The only remedy that we see against miscriticism is the panacea—educate—educate;—and we shall conclude this portion of our subject in the words of Burke: "And as for those so called critics, they have generally sought the rules of the arts in the wrong place, they sought it among poems, pictures, engravings, statues, and buildings. But art can never give the rules that make an art."

It would necessarily happen on the principle laid down in the commencement of this essay, and experience must, we think, testify to its truth, that art in the aggregate is the reflection of public taste, having in its various professors the representation of its prevailing ideas and tastes. The various usages of society which have been recently descanted on will, in them, be witnessed in their effects. It is, in fact, the master who is perpetually educating and training the painter, sculptor, and architect, either to pander to its vices, evincing in language eloquently false, the harlotry of genius, or to respond to its more elevated feelings.

It may at first appear paradoxical to denominate, at the same time, both the artist and the public as masters reciprocally, the one over the other; and perhaps it may be placed in a clearer light by comparing the public to the masters of capital who employ the masters or proficients in any craft to produce. The master of the craft is, although a servant of the former, the possessor of the talent and skill of performance which he adapts in the manner his employer has directed him.

In this portion of our subject which is devoted to the exposition of the injurious tendencies within the profession itself, we cannot do much more than enlarge on some of the points previously discussed, under the forms which they assume in the educational routine to which the artist is subjected, endeavouring to rescue him from the burden of the antique and venerable picture-precedents with which he is oppressed in constructing his ideal theory. It would not, however, be important to notice this, did it not offer an opportunity of attacking a false principle, for it has seldom, we believe, been observed that any theory of the arts thus deduced has ever been vitally productive.

It is as effete as the attempts of the Romanticist poet so admirably described by Strauss, "who endeavours poetically to renew the faded fiction-world of the faith of the middle ages, as the deepest wisdom. The historical periods in which Romanticism and Romanticists arise, says he, are those epochs in which an antique of society is placed in opposition to a modern form, which, as yet unprepared and undeveloped, appears in comparison with the developments of the other as merely vegetative.

"At these boundary lines in the history of the world, men in whom feeling and imagination overpower clearness of thought, souls of more warmth than transparency, will ever turn back to antiquity, out of the infidelity, the prosaic state, which they see prevalent about them; they yearn for the world of the old faith, rich in glorious forms and kindly feeling, and they seek to reproduce this for themselves, and, as far as possible, for others. Since, however, they are sons of their own time, they are themselves interpenetrated to a greater degree than they are aware of with the new opposing principle.

Antiquity, as it is resuscitated in them and by them, is no longer the pure primeval antiquity, but one mixed up in various ways with the modern principle. Faith is no longer the genuine spontaneous faith which governs the being in whom it dwells, but a faith to which the being attaches himself arbitrarily and intentionally. The conscience is prevented from seeing the contradiction and falsehood of this state of things, by fantastic clouds of its own weaving. Romanticism is essentially mysticism, and only mystical spirits can be romanticists; only the opposition between the old

* *Daily News.*

and the new, must, in part, be seen through the thickest cloud; the untruth of an arbitrary faith must, moreover, be felt in the deepest recesses of the conscience. On this account self-illusion and inner falsehood belong to the very being of romanticism."

After such a type would the romanticist portion of the public form the romanticist painter, sculptor, and architect? They are told to do as the ancients did; they fancy also, themselves, that such a consummation is devoutly to be wished; but they know full well, if they attempt it, that although it meets with the patronage of the revival enthusiast, that it will be *caviare* to the multitude, who will declare such attempts to be lifeless imitations. How should it be otherwise? for as Schelling justly observes,—"But as in the great progress of art each gradation follows the other, until in the highest they all become one; even so can, in the particular, no pure culture arise that has not developed itself in conformity with the law of nature, from the very seed and root. The demand that art, like every other living thing, should proceed from the first beginnings, and that it may vitally reproduce itself, should ever return back to these, may seem a hard doctrine in an age to which it is so often said, that it may take the most perfect beauty from existing works of art, already at hand, and thus, with one step, arrive at the last excellence. Have we not already the excellent—the perfect?—why then should we return to the imitative and undeveloped? Had the great founders of modern art thought thus, we indeed should never have seen their wonders: before them also stood the works of antiquity,—around, statues and bas-reliefs,—which they might have directly transferred to their pictures. But this appropriation of a beauty, not earned by itself, and so not understood, satisfies not an instinct of art, which tends directly to the original, and from this, in freedom and primal energy, develops for itself the beautiful.

They shunned not to appear simple, artless, and dry beside those exalted ancients; nor to nourish art in the unapparent bud, until the time of grace arrived. Whence comes it, that we still behold the works of those ancient masters, from Giotto to the teachers of Raffaelle, with a kind of worship and even partiality, if not because the faithfulness of their endeavour, the grand seriousness of their quiet and voluntary confinedness, receives from us our esteem and wonder? The mind which is accustomed to rigorous investigation will never rest contented with the ideas of another till it has verified and found them consonant with nature. To know the principle thoroughly on which the ancient painters, sculptors, and architects worked, would certainly, if acted upon, produce works which would be equivalent in merit; as it is the great feature of a principle, that it may be applied in a great variety of ways, and renders no necessity for copying;—but "art (let us repeat it) can never give the rules that make an art." It is no use looking through the antique or the old masters to deduce principles of nature: these did not precede nature, therefore the principles must have been either innate or founded on the producer's experience of nature; and it is the conviction of some of the most careful inquirers on the sources of human thought, that we have no ideas independent of experience: if so, they must have been derived from this source. *Let us therefore endeavour to understand nature, as the most effective course for discerning and destroying all fallacies and for the revival of truth.**

W. CAVE THOMAS.

SUFFOLK. — ARCHÆOLOGICAL EXCURSION.—We understand the ensuing meeting at Clare of the Bury and West Suffolk Archæological Institute is likely to prove one of great interest. It will be under the presidency of Colonel Baker, of Clare Priory; and the members will be conducted by the Clare committee to inspect the Roman encampment; the very interesting Norman mound, keep, and earthworks of the castle; the remains of the priory, the house and grounds of the president, the church, &c. &c. Previous to the meeting, we hear that excavations will be made in connexion with *La Motte*, or Castle Mound, to ascertain some doubtful points in Castle Archæology.

* To be continued.

ARCHITECTURAL REFLECTIONS.

AMONGST the innumerable causes for meditation which the stirring incidents of modern times present;—amid the conflict of jarring opinions upon questions of deep import to peace and happiness, which agitate the civilized world; amid the note and preparation of war, where peace, but a few months since, seemed permanently secured, and the fall of monarchies not less powerful and supreme in their politics, arts, institutions, and civilization, than were those of Assyria, Persia, Macedon, or Rome, for extent, absolute sway, and invincibility of arms;—when the standard of revolt seems erected throughout Europe, to summon the disaffected from their allegiance, or to urge the loyal and devoted to rally round the banners of their sovereign;—in short, when the ear is daily assailed with marvels that no longer create wonder, and the eye fatigued with the perusal of strange events, palling, from their frequency,—the calm consideration of questions of art and improvement, becomes doubly grateful, and the change of thought from the discord of politics to the harmony of proportion, a theme of more than ordinary pleasure and profit.

In a former article, under the above title,* the writer called attention to the importance of the due consideration of the state of art of our own time and country, so as to institute comparisons between the existing specimens of our own skill with those of our contemporaries,—to balance the respective merits of native with foreign, of modern with antique.

And perhaps a period more momentous than the present could not well be selected for such contemplation. Whether we look at painting, sculpture, architecture, music, literature, mechanics, chemistry, jurisprudence, physic, or divinity, or any of the innumerable subdivisions of the same extended range of varied pursuits that furnish occupation for the industry, and infinite scope for the invention of the enlightened of mankind, we shall find features as striking, characteristics as important in this our own time, as ever dignified those eras in the history of our forefathers which have received from the general fiat of posterity the title of "learned."

It is true that the extreme eminence of some of the leading characters of those distinguished periods may scarcely now be found; but recollect that it was partly by their rarity they became extraordinary, and that standing alone, as it were, amid a general dearth of proportionate learning, they derived additional brilliancy from the singularity of their position.

Numerous, indeed, are the subjects relating to art that arrest our attention, and difficult is it to say wherein one claims pre-eminence in interest over another; but perhaps it may not be too much to aver, that architecture is a subject of more importance in a nation's history than either of her sister arts. The mouldering painting may be uncovered, the sculptured fragment may be exhumed, and evidences of a refined state of art in ages past thus adduced, but the resources, power, wealth, and greatness of a by-gone nation can hardly thence be ascertained. Not so with her architecture. The fallen column, the deserted amphitheatre, the moss-grown aqueduct, the silent forum, the roofless temple, and the prostrate tower; the crumbling arch, with its half-effaced yet still legible inscriptions; the sumptuous palace and the vast and princely thermæ; the ponderous pyramid, and the taper obelisk; the sculptured mausoleum and the sepulchral excavation, all bear testimony to the extent, power, and grandeur of the people who required them, the intellect that designed them, and the munificence that reared them.

More captivating, perhaps, to the untutored eye of the unlearned in art, more sensually gratifying to the imagination of the general observer, may be the contemplation of the productions of the painter. His is an art which appeals to the senses of the most ignorant as well as the most intellectual of mankind. His advantage over the architect is, that his skill consists in depicting the works of nature, therefore of perfection; whilst the productions of the latter are purely of human origin, therefore of necessity imperfect.

The painter ransacks the elements of their treasures, and combines them upon his canvas according to his genius and his power. His province is, to exhibit nature as she is, with liberty to select her most striking beauties and most strongly-marked characteristics; to embrace her when her elements combine to suit his purpose; to reject her when devoid of strong interest, whether of detail or in combination.

* See Vol. V., p. 407.

The eternal works of nature are his subjects, their varied phases under opposite circumstances his study. The pathless ocean, lashed to fury by the raging tempest, darkened to hue of midnight by dense clouds, and bearing destruction upon each white-crested wave,—or calm, azure, glorious, and serene, as motionless and extended beneath the rays of the summer's sun it mocks and reflects its brilliancy in myriads of coruscations;—the broad expanse of country, hill and dale, field and forest, the misty mountain and the glassy lake, the deep umbrageous shelter of the silent greenwood and the stately majesty of the oak and chesnut, with their leafy brothers of the forest, clothed in tints as varied as harmonious,—the lowing herd and fleecy flock, with their rustic guardians, and all the numerous classes of rural life;—these, and hundreds such as these, are grateful subjects for his study and attention.

But how vast a field is yet unnoticed in our category,—the human figure!—the perfection of proportion—the beau-ideal of intellectual beauty. And here the sculptor participates in advantages with his brother of the easel. But though the primary principles of painting and sculpture are the same, their subsequent course is very different, for though they both appeal to the sense through the same organs, yet it is through different materials. The painter has the advantage of perspective, colour, chiaroscuro, and a thousand appliances to aid him in his work of illusion,—the sculptor that of actual form alone: the one pourtrays nature as she appears, the other as she really is,—yet they are both admirable, both most captivating, and though differing widely in character, tending to the same effect upon the human mind.

But architecture is a science differing most essentially from its sisters; not that she falls short of them in beauty, far less in interest, but that her beauty is more the effect of study than of nature, her interest less relying upon sudden effect than upon attentive contemplation and profound judgment.

Whilst painting and sculpture minister to the elegancies and refinements of civilized life, architecture is absolutely and indispensably necessary to its comforts, its most ordinary, most essential wants. All are interested in its progress, all have a greater or less stake in its well-being. Its beauties are geometrical. Unlike the fluctuating attractions of form and colour, they are permanent and fixed. Yet, though her geometrical principles are her most essential springs of action, even here she does but copy from her great original,—for how clearly may the principle be traced in nature's choicest treasures. In some instances the quality is still more highly developed, even to a positive law of numbers, as in the brilliant and perfumed flower, infinite in hue, in odour, and in form, the bright and glittering crystal, &c. &c.

The history of the progress of architecture, from its earliest and rudest specimens to those of this present period of intellect and refinement, is a study of surpassing interest and unbounded extent.

To read the annals of by-gone nations by their ruins, to draw deductions of greatness, wealth, and power from their crumbling monuments, when they who raised them have entirely passed away from the face of nature,—to unite the broken chain of early history, and supply its long-lost links of evidence by attentive perusal of the silent remnants of antiquity, is a mental exercise of the highest order.

Fortunately for the world, the love of deep research has never been found to slumber or decay. The noble spirit of adventure, the ardent love of inquiry and contempt of danger, toil, and privation, have ever incited some of the most enlightened of all nations to explore, in all regions of the known world, the hidden relics of antiquity. To the mind once penetrated with the burning desire for foreign tra-

vel and research, no obstacle seems sufficiently great to present an insuperable impediment to the cherished object. Neither the chilling influence of the north, nor the relaxing climate of the south, the fathomless depths of the Atlantic ocean, nor the pathless waste of the sandy desert, the knife of the savage, nor the still surer chance of pestilence and fever can deter the adventurer from his noble but hazardous purpose.

Great is the debt of gratitude the world owes to the noble-minded men who have thus devoted their best years and energies to the sublime task of elucidating the mysteries of the past, who have boldly risked their safety and their fortune upon the chance of unfolding the page of knowledge to their less adventurous, less inspired countrymen at home.

Exactly one century has elapsed since Messrs. Stuart and Revett conceived, at Rome, the idea of undertaking an architectural crusade to the mother of elegance, art, and refinement,—the city whose treasures of form and proportion, though reported and known to exist from the imperfect accounts of the few and unqualified travellers who had visited her, yet were almost chimerical to the existing world of letters,—the city, whose style of architecture, though understood to be the parent of that of ancient Rome, and germ of those of all the modern nations of the world, was but imperfectly known as to its real proportions and actual characteristics,—the city that gave birth to the wisdom of a Solon, the devotion of a Miltiades, the virtues of an Aristides, the ill-requited merits of a Cimon, and the elegance, policy, and splendour of a Pericles; the birth-place of Phidias, Ictinus, and Praxiteles; the parent of Socrates and Demosthenes, Xenophon and Plato, Sophocles and Thucidides,—Athens!

The achievement of this most interesting proposal, forms an important era in the annals of modern architecture. A new and superior system of proportion was to supersede the adaptations of that of ancient Rome, which, with few exceptions, had been the prevailing style following the Revival.

About the same period, Messrs. Woods and Dawkins published their excellent work upon the Ruins of Baalbec and Palmyra,—the ancient Heliopolis and Tadmor of Syria, whose gigantic remains for ages unnoticed and unknown, had only served as inclosures for the rude huts of the ignorant and wonder-struck natives.

The rubicon thus passed, the bright example has been followed up by numbers of zealous and skilful artists, whose labours have enriched the treasury of knowledge with spoils from all quarters of the globe.

Assyria, in her vast and imperishable foundations, seat of the once proudest monarchies of the world, but now so fallen that the site of some of her mightiest cities can hardly be ascertained; Egypt, in her pyramids, her temples, her obelisks, and her hieroglyphics, imposing memorials of her Pharaohs and her Ptolemies, for two thousand years enshrouded in a dense darkness which wrapped in mystery her time-worn monuments, ancient people, religion, arts, history, and dominion, till the cannon and genius of Napoleon burst the chain that closed the volume of the past, and by promoting the production of the superb "Description de l'Egypte," paved the way for the labours of Denon, Letronne, Champollion, and many others; Greece, in her temples, statues, and altars, of sublime proportion, whose sacred ruins in Italy, Sicily, and Asia Minor vie with those of the mother country in interest and high excellence; each and all of these have furnished ample matter for the deep research of the scholar and enthusiast.

Italy, cradle of the arts, undying source of poetry and music, painting, sculpture, and architecture,—within whose sacred realms are centred the springs of refinement and civilization,—to whose classic cities and azure skies a yearly crowd of ardent and aspiring artists, from all nations of the globe, flock and throng, that they may drink deep at her fountains of inspiration, inhale the ætherial atmosphere of her genial clime, and gaze with reverence upon her palaces and temples, her paintings and statues,—how wide a field for study does she disclose! Tuscany and the Papal States, the ancient seat of the Etruscans and Umbrians, still present the traces, in gigantic foundations, of the cities that flourished ere Rome existed.

The Greek colonies that settled in Sicily and the coast of Italy, and which from their power and splendour obtained for the land of their adoption the name of "Magna," still exhibit numerous fine remains of temples and sculpture, as at Pœstum, Agrigentum, Selinus, &c.

Rome, conqueror of the world, once mistress of an extent of dominion, centre of an amount of population and luxury that has never been equalled before or since, presents to the enthusiast a study that is never completed,—a river of delicious inspiration that can never be exhausted. Her treasures form the magic dream of childhood, the burning hope of youth, the brilliant reality of maturity, and the grateful memory of old age. Her temples and basilicas, palaces and thermæ, aqueducts, bridges, amphitheatres, and hippodromes, her columned fora and stately arches of triumph, her sculptured capitals and enriched friezes, cornices, and acroteria of porphyry and marble, would seem to be the labour of a life to examine critically and effectually.

But the wonders of art inclosed within the limits of the eternal city alone form but a very small portion of the works of genius and power that owned Rome for mistress and inventor, and whose gigantic ruins, scattered over a large portion of the globe, astound the beholder by their grandeur and extent. The proud monuments of their extended sway and boundless resources, which are scattered through Spain, Italy, Gaul, and Germany, have not been unnoticed by the architectural pilgrim, though numbers of specimens yet remain to be described and illustrated.

Athens herself, in her temple of Jupiter Olympus, and Egypt, in her pillar to the memory of Pompey, add fresh tributes to the munificence of their conqueror. The sacred ground of the Decapolis of Palestine is rich in Roman structures yet to be explored.

Baalbec, once famed for the worship of the sun,—the chaos of ruins of whose gigantic temple, dedicated to that luminary, defied the graphic powers even of a Lamartine to describe,—and Palmyra, hallowed by the memory of Zenobia and Longinus, have been already exhibited to the world by our indefatigable countrymen. The northern coast of Africa, for a length of 600 miles, presents a vast number of important ruins, which have not yet been properly examined, though well known to exist; indeed, to cite the individual cities of note that present ocular proofs of Roman occupation, or to enumerate the most important of those vast constructions that tell of Roman wealth and enterprise, would far exceed the limits of our present intention.*

Alex. Fred. Ashton.

* Conclusion next week.

IMPROVEMENT OF THE NATIONAL GALLERY.

We doubted very much the statements which have been the round of the papers, that Mr. Barry had submitted a design and estimate for enlarging the National Gallery, and the inferences therefrom deduced that the matter was settled, and therefore avoided quoting them. We have now great gratification in being the first to lay before the public the following

REPORT,

From the Select Committee of the Commons,† appointed "to consider of the best mode of providing additional room for works of art given to the public or purchased by means of parliamentary grants," which, with other facts in our possession, shews we were right.

"In considering the matter submitted to their attention, your committee were naturally led to turn their first thoughts to the valuable collection of pictures just presented to the country by Mr. Vernon. They have been gratified to find that temporary accommodation can be at once provided for them within the precincts of the National Gallery itself, although the amount of room, now but barely sufficient for this single purpose, and the early prospect of greater demands upon it, render it most desirable that additional space should be provided as soon as may be possible.

Your committee are unwilling to pass from this topic without recording their sense of the public spirit and considerate liberality which have prompted this living bequest on the part of Mr. Vernon, and they entertain no doubt that the public gratitude will furnish the most powerful incentive for eliciting further instances of munificence similar in kind, as well as the most honourable reward to him who has afforded this noble example. To this end, however, the means of adequate reception seem to be an indispensable requisite.

The likelihood, therefore, of fresh supplies to the National Repository of Art, whether derived from individual generosity, or by gradual purchases from the public funds, renders it advisable that the best mode of dealing with the National Gallery should be promptly taken into consideration. Your committee cannot but regard the present building to be not only deficient in the requisite space, but, whatever may be the merit of particular portions or details, to be also very much wanting in the dignity and elevation due both to its purpose and its site. They have not omitted to consider the question, whether it would be expedient to erect an entirely new building upon another spot, and with this view they gave their attention to the most obvious situations in the metropolis; but, after careful deliberation, they unanimously concurred in the opinion, that taking into account—

The commanding nature of the site occupied by the present building, to which perhaps it would be difficult to find a parallel in our own or any other capital:

Its accessibility, and nearness to the chief thoroughfares, and centres of business, which are fed by what has been described in a well-known phrase as 'the fullest tide of human existence:'

The aids to economy, which, without sacrificing the beauty of effect which a new front and additional height may confer on the structure, would be furnished by the rare circumstance of only one ornamental front being rendered necessary from the disposition of the ground, and by the means which are at hand for making use of the whole of the present interior, due regard being paid to the convenience of the Royal Academy in procuring suitable accommodation elsewhere:

The space for further enlargement, which, in the process of time, and concurrently with the exigencies of the collection, might be supplied by occupying the uncovered ground now in the occupation of public establishments, in the rear of the present building,—

For all these combined reasons, without presuming to indicate the precise period for the commencement of such a work, the determination of which may be governed by other considerations, your Committee would recommend that whenever it is undertaken, the enlarged and improved National Gallery should be on the same site as the present; and for the completion of such a work, which ought to be not unworthy of the age, the country, and its own destination, *they would gladly see the most eminent talent of the nation invited to compete in designing an appropriate and enduring monument.*"

September 1, 1848.

† Lord John Russell, Sir Robert Peel, Mr. Hume, Viscount Morpeth, Mr. Goulburn, Mr. Baring Wall, Mr. Charteris, Earl of Lincoln, Sir Benjamin Hall, Marquis of Granby, Mr. Tufnell, Mr. Wakley, Mr. Disraeli, Mr. Vernon Smith, Mr. Banks.

Brass Letters on Glass.—According to the specification of Mr. J. L. Lamenaude, who has secured a patent for cements, for affixing brass letters on panes of glass, the following are his recipes:—First, 15 parts of copal varnish, 5 parts of drying oil, 3 of oil of turpentine, 2 of essence of turpentine, 5 of animal glue, dissolved in a water bath, and 10 parts hydrate of lime.—Second, 15 parts of sanadrach and galipot resin varnish, 5 of drying oil, 5 of oil and essence of turpentine mixed; these are first mixed, and then 10 parts of Spanish white and dry white lead are added.—Third, 15 parts of copal varnish and gum lac mixed, 5 parts of drying oil, 3 parts of a solution of caoutchouc, or gutta percha, 7 parts of tar oil, and 10 parts of Roman cement and plaster of Paris, in powder, mixed.—Fourth, 15 parts of copal varnish and colophane resin, 5 of oil and essence of turpentine, 2 parts isinglass in powder, 3 parts iron filings, or blacksmith's cinders, ground and sifted, and 10 parts of washed earth, ochre, or rotten-stone.

THE STONE QUESTION.

ST. GEORGE'S ROMAN CATHOLIC CHURCH.

We have received a statement from Mr. Myers, the builder of St. George's Church, in respect of the premature decay of some part of the stonework there, with an urgent request that we should give publicity to it. It is to the effect, that although the stone used there externally is, for the most part, indeed with a very trifling exception wholly, Bath, as we stated, still that a small quantity of Caen stone was used with it (as, for example, the cornice and embattled parapet of the lower portion of the Chapel of the Sacrament, at the east end), and that it is *this*, and this alone, the Bath stone being at present sound, which is decaying. We have not been able yet to see for ourselves the truth of the statement, but give it as the assertion of the builder. Admitting it to be correct, it must of course not be taken as proving Bath stone good and Caen stone bad. It simply shews that these particular blocks of Caen stone were bad: and the quarry whence they came (the particular part of the quarry it should be, for in every quarry there is both bad and good), and other circumstances in connection with them, would be legitimate objects of inquiry.

We have inquiries and statements on the subject of stone from all quarters: every one seems at sea about it, and confidence is greatly shaken. So far as Caen stone is concerned, we have determined on an immediate personal examination of the quarries, with the view of afterwards testing some of the specimens of stone which we shall obtain, and giving, if possible, some sound information on the subject.*

HUTCHISON'S PATENT FOR THE INDURATION OF STONE.

In connection with the important subject, the preservation of stone, we have recently examined specimens of soft sandstone from the Calverley quarries, Tonbridge Wells, after being subjected to the indurating process practised by Mr. Hutchison under a patent, and the change effected in them is very striking. The effect of the process, according to the patentee, is not merely to indurate soft stone, but to render all kinds of stone, &c., impervious to atmospheric action, vermin, &c., which important qualities cannot be too highly estimated for hydraulic, paving, building, decorative, and monumental work. He professes to transform the Caen, Bath, and other stone, into materials invincible to destructive agents, to equal marble for beauty and durability, and says, for water pipes, reservoirs, cisterns, mangers, troughs, sinks, &c., neither iron nor other material can equal the indurated stone for cheapness and strength.

We need scarcely say that time is the great test for such an invention, but are bound to add that the specimens we have seen entitle the process to the considerate examination of those who are interested in the matter.

* We shall be happy to receive the results of personal experience of stone from any of our readers, especially from practical men.

THE GAS EXPLOSION IN REGENT'S PARK.

Dr. Arnott has addressed a long letter to the *Times*, of which we think it right to record the main facts.

A destructive accident of a new kind or degree, as he justly remarks, becomes often a very valuable lesson by attracting attention to a subject previously ill understood. The late gas explosion in Albany-street—the most disastrous, perhaps, which has taken place since gas lights have been used—appears to be an occurrence of this kind. Parties wished to make it appear that gas could not have been the explosive agent, but that gunpowder or gun cotton must have been in the house. It was of consequence that no doubt should remain on this point.

Such is the relation of ordinary coal gas to atmospheric air, that if the lighted gas be allowed to issue uniformly and to mingle always with a sufficient proportion of fresh atmospheric air, it burns with a safe and steady flame, combining gradually with the oxygen of the air; but if, before being kindled, any considerable quantity of the gas be allowed to issue and to mix completely with just ten times its volume of atmospheric air, on a light being then applied, the whole mixed mass kindles at once as a flash, like gunpowder, and dilates with violent explosive force. The strength of such explosion is shewn in coal mine accidents, where sometimes more than 100 men at one time have been destroyed, and horses have been thrown up from the shaft like bullets from a gun. It may be experimentally exhibited by filling a bag with the required proportions of gas and air, and then blowing soap bubbles from the bag, each of which, when set free and touched in its ascent by the flame of a candle, explodes like a pistol shot. The degree of the expansion of the airs when thus fired, and which is caused by the sudden heat of the chemical action, is held to be at least tenfold; or such that 1 cubic foot, which weighs something more than an ounce, becomes for the time more than 10 feet, while an ounce of gunpowder during explosion is known to expand only to about three-fourths of 1 foot of gaseous matter. It is to be remarked, however, that gunpowder shews its prodigious force, not when allowed to explode in a wide or open space, but when confined to the bottom of a gun-barrel.

Gunpowder, too, consists of fixed proportions of nitre, charcoal, and sulphur, intimately blended: all the things necessary to the explosion are present in the powder itself, waiting only the spark which is to inflame them, and the smallest spark can inflame the largest magazine. But far different is the case of coal gas considered as an explosive agent. The gas itself, like the charcoal of gunpowder, is only one of the elements of a fulminating mass, and can no more explode alone than the contents of a coal cellar can. Before it can burn at all, every particle or measure of it must find somewhere, and mix perfectly with, two particles or measures of oxygen gas. A lighted taper plunged into mere coal gas, instead of exploding the gas, is itself instantly extinguished by it.

The series of faults committed to bring about the Albany-street explosion was extraordinary indeed.

1. The gas meter with its pipes and cock—a delicate apparatus, likely to be damaged by a rough touch—was placed in an enclosed dark space under the window shelf, which was made to serve also as the receptacle for the numerous heavy window shutters pushed in and dragged out every morning and evening.

2. It was not a careful person of the shop who managed the window shutters, but a thoughtless boy, who came night and morning for that purpose alone.

3. It had been often observed that gas was escaping, and examinations and repairs about the meter were frequent; yet the hazardous arrangement remained unchanged.

4. When at last, on the night of the catastrophe, the boy, as was to be expected, struck the meter forcibly with a shutter, he had in reality left a leak at the meter, apparently by breaking the main cock and pipe, which in one hour and twenty minutes filled with explosive mixture the shop, where shortly before the three lamps had been burning in safety.

5. Smell of gas was felt almost immediately near the shop door, and before long at the top of the stairs. Mr. Loten, taking a candle in his hand, went towards the shop to examine it.

6. The shop, with so many lights in it, had no fire-place to favour ventilation, and the doors had been edged with leather to make them close. Then the complete mixture of escaping gas with the air of the shop was brought about by the fact that the gas did not escape from the burners high up, but entered the shop low down, and through the chinks of the shutter-box.

From what has now been said, it will appear that the means of safety for persons using gas in their houses are—

1. To have the apparatus made and fixed by competent workmen.

2. If any leak be perceived by the smell, to have it promptly attended to, and to open doors or windows to prevent accumulation.

3. On no account to carry a lighted candle to where there is a strong smell of gas.

4. To have the room or rooms in which gas is burnt ventilated from near the ceiling. The balanced chimney valve, which I proposed some years ago as a means of maintaining a healthy state of inhabited rooms generally, and which, having been mentioned in a clause added to the Metropolitan Buildings Act expressly to direct the mode of fixing it, is already extensively used, would, I believe, make it almost impossible for a dangerous accumulation to take place, even if the burner cocks were purposely left open; and wherever gas is used in an inhabited place, this valve is not more important as a security against explosion than it is to guard inmates against the deleterious effect of breathing the burnt air of common gas illumination or of any other. There is no patent right for the valve, and an adroit workman any where may make it.

With these precautions, gas is, in a majority of cases, not only the most beautiful, convenient, and cheap means of lighting, but, as shewn by past experience, rendered still more assuring by the explanations of scientific men, is also on the whole the safest; and gas may therefore be regarded as one of the precious boons which advancing science has bestowed of late on the human kind.

The learned doctor omitted to add that the gas companies themselves have been the main hindrance to its much more extended and economical use in England.

BILL OF A BUILDER-ARCHITECT.

Some time ago we referred to the state of St. Mary's Church, Bridgewater, and urged the parishioners to do such repairs as were necessary, under proper advice. A Mr. Hutchings, a "builder and architect," was employed on the part of the parish; tenders were advertised for and three received, which ought to have placed one of the parties tendering in our list of "blind builders," unless, indeed, he saw further than honest men. They were as follows:—Stockham, 285*l.* 11s.; Tottle, 192*l.*; Hurford, 165*l.* The lowest tender was taken, and a contract was entered into. The work was done, and Mr. Hutchings's bill was sent in; and here it is,—a pretty specimen, as most of our readers will admit:—

The churchwardens of St. Mary's Church to T. Hutchings—

1846.—Oct. 10 My attendance to surveying, directing the taking off the mortar, and certifying for same	£3	0	0
Man one day preparing and making mortar for pointing, for specimen, 3s.; lime, 2s. 6d.; sand, 2s. 6d.....	0	8	0
Oct. 17. Three men and labourer six days to pointing on north side of tower for specimen	4	16	0
Man half-day ditto, 1s. 9d.; paid for water, 2s.....	0	3	9
Myself attending to ditto.....	1	10	0
Loan of scaffolding	0	15	0
Stone for repairing quoins, and for walls	0	12	6
Quarter cwt. hair for mortar	0	2	6
Oct. 24. Man and labourer three days cutting out and fixing base.....	0	18	0
Man ditto four and half days, 13s. 6d.; eight barrows mortar, 6s.....	0	19	6
Man one and half ditto.....	0	6	0
Fifty-eight feet of base to north side of tower, at 1s. 8d.	4	15	8
Oct. 31. Man and labourer one and quarter day fixing ditto	0	7	6
Man ditto two and half days	0	7	6
Nov. 7. Specifications and instruction for advertising and letting the work	3	10	0
1847.—March 26. My attendance daily for twenty weeks, surveying the progress and directing of the different works, under the specification, at 30s. per week	30	0	0
	£52	12	11

Pretty well this, for superintending work to the amount of 165*l.*

The churchwardens paid the account, but the parishioners are not well disposed towards re-imbursing them the amount of this amusing charge, and thereupon issue is joined.

The *Bridgewater Times* says:—"No architect, no regularly-bred man, would for a moment have thought of sending such a bill to any public body. The nature of the work to be executed being of the simplest character, comprising the removal of the stucco and pointing, and making good the walls of the church, the usual professional fee or per-centage would have satisfied a regularly qualified practitioner. Mr. Hutchings, however, valuing his services at a much higher rate than any architect would charge for his advice and survey, sends in to the parish a bill amounting to the above enormous sum, which, by a most unfortunate oversight, or culpable neglect, is paid to him by the person who is employed to collect the rates." The gist of the matter, however, is to come:—"It is rumoured—in-

deed it is generally believed—that Mr. Hutchings *was himself the contractor for this work*, though in another's name, the party who nominally was the contractor being known to be a subaltern under Mr. Hutchings on many occasions. If this rumour be true, then the grossness of the whole proceeding becomes more and more disgusting. A man beats his brother contractors by the lowness of his tender, and makes it up by charging upwards of 30 per cent. for overlooking his own work!!"

If the rumour be correct, this is a nice illustration of the "running with the hare and hunting with the hounds," consequent on the "builder and architect" system pursued in many of our provincial towns, and to the evils resulting from which we have felt it our duty to direct attention on previous occasions.

MATTERS MECHANICAL.

PATENT LAWS—PERPETUAL MOTION—BRICK-WORK.

SIR,—Although unconnected with building, I unaffectedly declare I would rather "lose a meal" than miss a sight of THE BUILDER. First, because I take an interest in the information it contains; and secondly, because of its *truthful* sympathy in the interests of, and understanding of, the English workman,—the sympathy of *heart*, and not of vocation: I earnestly entreat, therefore, your attention to that which materially concerns his interests,—I allude to the present state of the patent laws. Yes, Sir, the country whose prosperity depends more than that of any other country in Europe on its manufactures, and its manufactures on its machinery, is the country that throws by its laws all the obstacles in its power in the way of the poor but ingenious improver of that machinery. Let him be a 'Brindley,' a 'Watt,' or a 'Stephenson,' unless he can procure a patron to advance some 400*l.* or 500*l.* merely to use his own, he may die as he lived, unknown and uncared for. I speak feelingly: I am one of the many who, with a passion for mechanical invention, is debarred by these laws and his poverty from (perhaps) benefiting himself and family, and possibly his country, by the due use of those faculties with which Providence has endowed him. For myself, I give up hoping against hope, and resign myself to my fourteen or sixteen hours' labour per diem for a bread and cheese pittance; but others would benefit by the change, which *I* scarcely hope ever to see, unless the "press" take the question in hand. Would that they did so: I should not then despair of seeing those odious laws (which I firmly believe are retained *solely* for the patronage and bureaucracy the fees maintain) abolished, and replaced by a just and equitable enactment.*

While I am writing, Mr. Editor, I shall venture two or three observations on paragraphs that have appeared in THE BUILDER. I will take, first, your note on the (rumoured) discovery of *perpetual motion*. I have always entertained the same opinion as yourself, that the thing was a delusion, and utterly *impossible;* and yet in the face of that belief, I have been compelled to retract and come to the conclusion that it *is* possible. I will give you the cause of this belief. One of my first inventions was a system of atmospheric propulsion, in the course of which the phenomenon of atmospheric pressure was naturally forced on me; and in the course of my investigations on the subject, *I hit on a method of obtaining a vacuum, and keeping that vacuum* CONTINUOUSLY *for working purposes*, being practically, in fact, what is termed perpetual motion. I have said I was no believer in perpetual motion, and therefore I threw the subject aside, feeling that there MUST be some undetected fallacy in the plan. Some time after I met in some scientific journal (I am not sure, but I think your own) with a notice addressed to a "Perpetual Motion" correspondent, in which, after impressing on him that the pursuit was a fallacious one, it goes on to say, that till he could discover some means of obtaining a vacuum, and keeping it, he might give up all hope of succeeding. The means indicated so singularly tallied with the means by which I had imagined the given end could be obtained, that I again resumed the idea, and consulted all the authorities I could get hold of on the subject, the result of which was, that as no natural or mechanical law was violated, but on the contrary, that it was the natural result of such laws, and therefore perfectly practicable, I was led to believe that perpetual motion is no delusion, but *a fact*. I should not be at all surprised if the discovery alluded to by your foreign correspondent proves authentic, and possibly identical with my own, the more so, that I do not think it well suited to marine navigation, though *possible to be so used*: leaving all this out of the question, and right or not, I think our scientific men have singularly neglected the atmosphere as a working power.

The method proposed by a correspondent of yours in a late number of THE BUILDER, of applying vulcanised India rubber to the longitudinal tube of the atmospheric railway has objections: the India rubber would, as you observed, be forced into the tube by the pressure of the external atmosphere, and thus fail. There are, however, other means by which this singularly valuable material could be satisfactorily applied, but at present, and probably for some time to come, NO PLAN of air propulsion, *however simple and economic*, has any chance of being adopted by any railway company, in the face of the abandonment of the system by the South Devon line. I much regret the failure of Samuda's system, as, had it succeeded, other systems would have had a fair chance of being tested. I cannot say I am much surprised at the result, as Mr. Samuda was either too confident or too proud to receive any hint from any quarter. I am, however, still convinced the *principle* is sound, and will yet supersede the locomotive.

Your last number but one has a valuable article on the use of brick moulding, &c., and exemplifies another instance of our wise fiscal laws in preventing the proper use of material in building, but rail as we may we can scarcely alter, but must put up with them; all we can do is to seek the best means of obviating them, and I therefore take the liberty of giving an idea on the subject. Some time ago, while casually looking on at some bricklayers at work, I was struck with the great waste of material and time, in the most skilful workman frequently destroying two or three bricks before he could get one to some particular size or angle. Thinking over the subject, I devised a modification of the *common lathe*, by which an ordinary bricklayer's labourer could cut a brick to any given size or angle in less time than the most ready workman could hack it into rough form with his trowel. I thought, after the accident at the Birmingham Railway station, of submitting the plan to the contractor, for the rebuilding the columns, piers, &c., on the plan of first cutting the bricks to a geometrical form to dovetail into a *solid* mass—but expecting it would prove, as usual, trouble in vain, I abandoned the idea altogether. The article in question has brought the subject again to my mind, and I perceive the subject has greater scope than I had imagined. By the means I have indicated a common brick may be *readily* cut to almost any form for ornamental purposes, the surfaces being nearly as accurate as though ground by hand labour; in fact any form, *circular, angular, or plane*, could be given it, at a moderate cost. I should be glad if any builder would give me an opportunity of practically testing the merit of the plan (if it have any); but, Sir, as I have said, I have given up hoping against hope, and this brings me again to my earnest wish that the press, and more particularly THE BUILDER, will take the question of reform of the patent laws in hand, in the hope that the poor workman may have *some* chance of bringing before the public, and obtaining for himself, the fruits of his invention.—I am, Sir, &c.,

City-road. R. G. BARRATT.

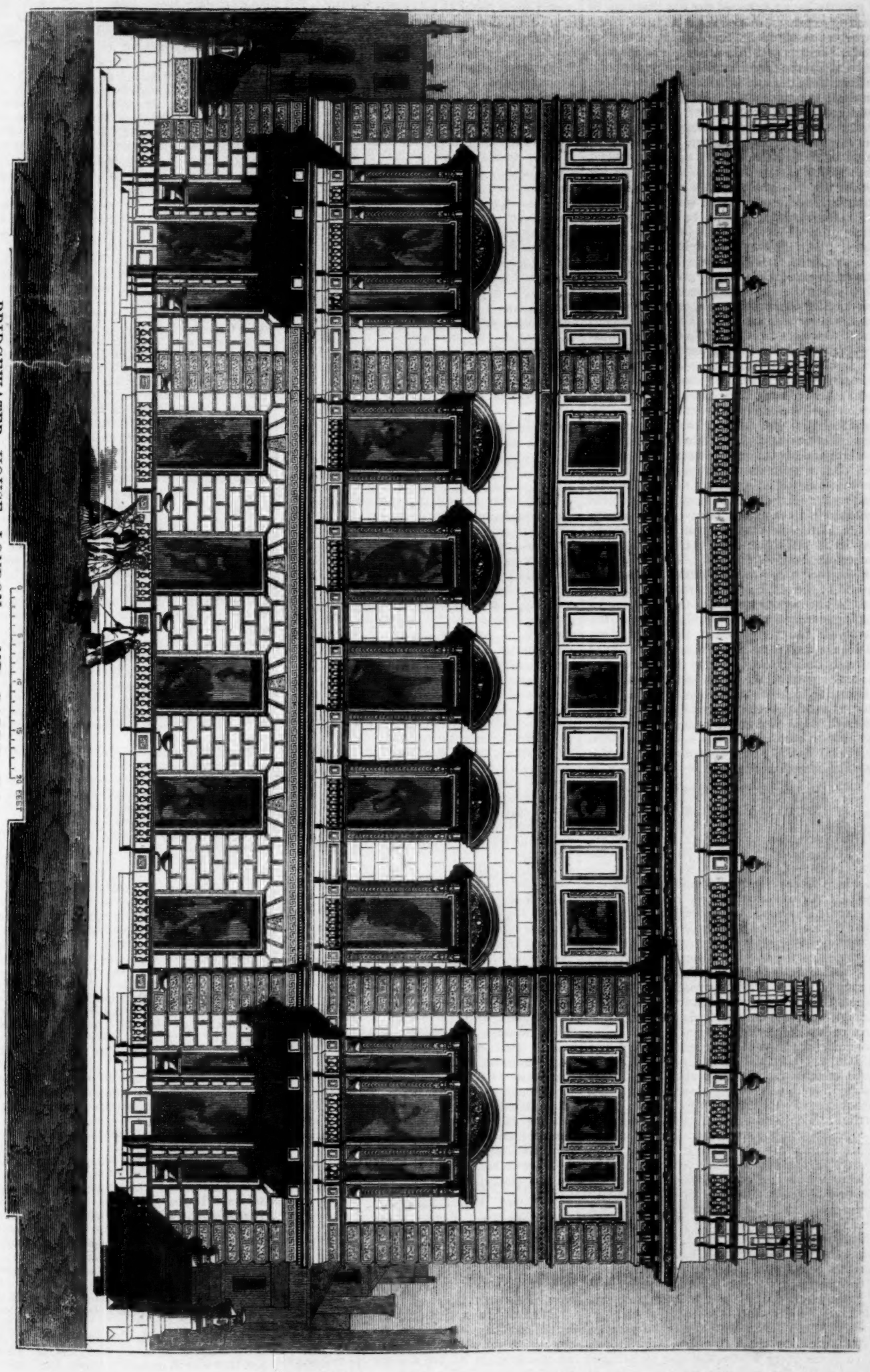
* A Government inquiry into the operation of these laws is pending.—ED.

FINE ARTS IN NORWICH.—Amongst the preparations for the forthcoming musical festival in Norwich, is a collection of modern works of art, nearly 400 in number, comprising pictures by Turner, Eastlake, Maclise, Etty, Bright, Danby, Pyne, Stanfield, and other good artists. It is said that so fine a collection has never been seen in Norwich before.

NOTES IN THE PROVINCES.

A TENTH window in the restoration of King's College Chapel, Cambridge, has been finished. The colours are said to be more subdued than in many of those already restored. The expense of the whole restoration will be nearly 6,000*l.*——The Grimsby Docks, according to the *Lincolnshire Times*, are proceeding satisfactorily, under their chief engineer, Mr. Rendell, and resident engineer, Mr. A. Smith. In inclosing the area of 150 acres from the sea, 10,000 tons of chalk have of late been weekly conveyed by a railway for the embankment. The 'blow sands,' however, have been interfering with the progress at one part, where there has been a sinking or defect in the piles in consequence. The first stone of 'the Royal Albert,' 37-acre dock, will be laid, it is still expected, by H. R. H. Prince Albert, next month.——At Whimple Church, Devon, which has very lately undergone expensive renovation, the dry rot, it is said, has seized on the new wood work, the whole of the wainscoating or wall boarding of which calls for immediate renewal.——At a meeting of the Monmouth Town Council last week, tenders were received for a trifling job of plastering and repairing some houses, the highest of which was 14*l.* 17s. 6d., and the successful one 4*l.* 15s.!——A site near Birmingham has been given by Mr. Adderley, M.P., to the Worcester Board of Education, for a training institution on a large scale. The same public spirited gentleman is shortly to lay the first stone of a church in Saltley, near Birmingham, to which he appears to have also presented a site and 3,000*l.*, with 150*l.* per annum for endowment. It is to be in the Gothic style, with tower and transept; sittings 1,000, two-thirds free. Exertions are being made for the erection of a district church and school at St. Jude's, Birmingham. General Howard Vyse, who gave a large site for the National School-rooms at St. Paul's, Birmingham, has given a valuable site for a school in St. Thomas's, to the erection of which 400*l.* have been contributed by the association for extending infant schools.——Some of the nailers in the district round Rowley Regis, being out on strike for old prices, a meeting of those in Rowley Regis has been held, and resolutions have been come to to support them, and to parade the district and meet every day till the masters yield to their demand.——In the engineering department at the Birkenhead Dock works, preparations are in progress for the recommencement of the construction of the docks forthwith. Coal from the Welsh mines can be brought, it is said, to Birkenhead Docks, and put on board vessels at very considerably less cost, and with far greater facility, than from the Lancashire coal-field.——The foundation-stone of the schools in connection with the Independent chapel, Cavendish-street, Manchester, was laid on Monday week. They will be in the Tudor style, and will comprise entrance-hall, library, and lecture rooms, private class rooms, &c.; estimated expense, upwards of 5,000*l.*——Some masons at Glasgow have struck work on a demand of 12½ per cent. advance on 1*l.* a week's wages. According to the local papers there is "a shoal of unemployed masons from the country" quite ready to take their places.——The *Belfast Northern Whig* says that Government has resolved to establish three schools of design in Ireland; namely, at Belfast, Dublin, and Cork.

NEW CORN EXCHANGE, LEWES.—Another, and yet another! The new Corn Exchange at Lewes is the largest room in the county of Sussex: the dimensions are—156 feet long, 33 feet wide, and 36 feet high. On other days but Tuesdays it is used, if required, for assemblies, concerts, &c.; in fact, it is belonging to the Star Hotel, and the principal entrance is through a lobby leading from a very beautiful carved staircase, which many years ago belonged to one of the largest mansions in the county. It has a light iron roof (railway station style), from which it is lighted on both sides, and though quite plain and without pretence, the apartment has a character, if we may judge from a lithograph of it, which is creditable to the taste of its architect, Mr. William Dunk.



BRIDGEWATER HOUSE, LONDON.—MR. BARRY, R.A., ARCHITECT.—(See page 445.)

RAILWAY JOTTINGS.

Among the plans which these pinching times of poverty have suggested for the economy of working expenses, one of the most curious and important seems to be the Lilliputian system of Mr. Samuels and Mr. Adams, now about to be tried in the branch traffic on part of the Eastern Counties and Bristol and Exeter. To diminish the unprofitable weight of a train, and increase the tractive power of that weight to the utmost, are, of course, the objects of this invention. They propose, says the *Railway Chronicle*, to form a single large carriage, like those at present made by Mr. Adams for the North Woolwich branch of the Eastern Counties, capable of carrying sixty passengers, and to carry on the front of it a small locomotive engine. The tender will form part of the carriage. Of course the weight of the whole is to be placed extremely low. There will also be a small additional carriage, so as to take on the whole 100 or 120 passengers, with engine and tender. The weight of engine and carriage will not exceed some 12 to 15 tons, and with passengers, will weigh perhaps 20 tons. ——Eighty-three railway Bills, authorising the raising of 14,887,270*l.*, viz.:—10,794,660*l.* by shares, and 4,137,610*l.* by loans, are stated to have received the Royal assent during the session.——The viaduct at Liverpool, for the Liverpool and Bury line, is nearly complete. The Walton and Upholland tunnels are finished, and all the bridges between Liverpool and Wigan are built. From near Wigan to the junction with the Bolton and Preston the bridges are all built. The large viaducts near Bolton are in a forward state. The masonry of the Darcy Lever viaduct is complete, and two-thirds of the iron-work is fixed. The stone viaduct at Bury is finished. The permanent way (double line) is far advanced throughout. Several of the platforms and stations are built, and the line may be opened next month.—— The temporary wooden bridge across the Tweed, on the north-eastern line from Newcastle has had a carriage on it, but it will not be ready till the 1st of next month.——On the under part of the Kelso and St. Boswell's branch line little progress is being made, if we except the bridge over the Teviot, at Roxburgh, where they are casting the arches. More time has already been expended on two miles here, it is said, than might have constructed a railway five times the length.

TO EXTINGUISH FIRES.

Dr. Reid has proposed a plan for extinguishing fires in ships. He says, in the *Daily News*:—"Flame or combustion cannot go on where there is carbonic acid gas. This is one of the elementary principles of chemistry. It may be shewn in various ways. A lighted taper plunged into a jar of carbonic acid gas is instantaneously extinguished; or, if we take the glass of a common argand burner, and close the upper end of it by a flat plate of glass, or even by a piece of card or pasteboard, firmly, so completely as to prevent any current of air through the tube, on introducing for about an inch or so the flame of a candle at the other extremity (the glass of the argand burner being held upright), it will shortly, usually in the space of little more than a minute, be extinguished, merely by the accumulation of the carbonic acid gas produced by its own combustion. The production of carbonic acid gas is completely at our command, for on adding dilute sulphuric acid to chalk, we can set at liberty, in the space of two or three minutes, enormous volumes of the so-called fixed air. The cost of material for a ship of 1,000 tons would not exceed, at the utmost, 15*l.* or 20*l.* sterling. By means of tubes proceeding from the upper deck, in connection with a cistern containing the dilute sulphuric acid, to the quarters below where there is most likelihood of danger from fire, or moveable hose (made of gutta percha), which can be introduced into any part of the vessel,—the oil of vitriol, previously diluted with water, can be at once poured over the chalk (which is to be thrown down in the place where the fire rages), and immediately, the carbonic acid being set at liberty, the fire is extinguished; for combustion cannot go on in an atmosphere of carbonic acid gas. I have been much occupied experimenting on this subject, and I find that from five tons of chalk as much carbonic acid gas may be obtained as will be sufficient to completely fill a vessel of 1,000 tons burden. The expense of laying the tubes will not exceed 30*l.* or 40*l.*; and, once laid, there is no further trouble or expense." The principle of the "Fire Annihilator," to which we have referred several times, seems here involved, but the apparatus would apparently be cumbersome, and application comparatively difficult.

Since the foregoing was in type, we have received the following letter from Dr. Reid:—

Sir,—As the patent of the "Fire Annihilator" does not seem to be capable of being immediately used, and as fires nevertheless occur daily or nightly, I beg leave to direct your attention to the plan I have proposed for extinguishing fires at sea; and if you feel disposed to notice it, may I beg that you will subjoin that I have ascertained the expense may be reduced to fully one-third of what was first named, by a peculiar adjustment, and that I only require a nominal fee for superintending the arrangement of the tubes, and a small allowance to my assistant for directing and explaining the manipulations necessary; so that the plan or scheme may be successfully wrought by the humblest capacity.

I am, Sir, &c.,
William Reid, M.D.

4, Salisbury-street, Strand.

TRIAL OF THE BOWSTRING RAILWAY BRIDGE.

On Wednesday week, one of the new wrought iron bowstring bridges, constructed for the Blackwall extension line, under the superintendence of the engineer, Mr. Locke, was publicly tested at Messrs. Fox Henderson and Co.'s works, near Birmingham, in the presence of the Government Inspectors of Railways, the secretary to the Government Board of Commissioners for inquiring into the strength of iron, the mayor of Birmingham and others. The bridge-rib presented a clear span of 120 feet between the bearings. It is constructed entirely of wrought-iron, and consists of an arch of boiler plates and angle-iron, tied across at the ends by horizontal bars, and the tie-bars are connected with the arch by vertical standards and by a double system of diagonals, with the view of distributing over the whole curve of the arch the action of weights placed on or passing over any point of the bridge. The proof was applied by loading the bridge-rib with 240 tons of rails, bars, &c., and it produced, as we are informed, the following results, as the weight was gradually applied.

Weight in tons of rails, &c. placed on the cross girders. Tons.	Extreme amount of deflection produced at centre of arch. Inches.
34½	0 1/16
68½	0 3/8
102¾	1 1/16
137	2 1/8
171¼	2 3/4
205½	3 5/16
240	3 11/16

The proof weight was fixed at 240 tons, as being double the greatest load which the bridge can be required to bear. A heavy goods train weighs less than half a ton per foot lineal: a train consisting entirely of locomotive engines (which would be the heaviest of all possible trains) would only weigh one ton per foot lineal, and consequently would place a load of not more than 120 tons on a bridge of 120 feet span.

We were not present, but have no doubt as to the correctness of the results reported to us.

The Diorama in the Regent's-park, with the two pictures now exhibiting, and thirteen large pictures of former years, has been sold by auction for 6,750*l.* The building is said to have cost 10,000*l.*, and is held for an unexpired term of 74 years.

Dinner to a Sculptor.—In the week before last, a public dinner was given in the cottage of Burns, Ayr, to Mr. Fillans, sculptor, on the occasion of his sojourn in the neighbourhood after the "inauguration" of his statue of the late Sir James Shaw, Bart., at the cross of Kilmarnock, and the bust of Professor Wilson, at Paisley.

METROPOLITAN COMMISSION OF SEWERS.

A general court was held on Thursday in last week, at the Sewers-office, Greek-street, Soho-square; the Rev. W. Stone in the chair. The court was held for the purpose of hearing appeals against the sewer-rates for the Westminster district of the commission.

Appeal of the Vauxhall-bridge Company.—The chairman of the Vauxhall-bridge Company, and a deputation of the Directors, attended the court for the purpose of appealing against the sewer-rate charged upon the Company for the bridge, and also for a house belonging to the Bridge Company.

The Chairman of the Company being called upon to shew cause why the rate was objected to, said, in the first place they received no benefit, and avoided no damage by the works of the commissioners, as the bridge was considerably above high-water mark, and there was an excellent causeway leading to the Houses of Parliament. If any benefit was received, however remote, the law might be so strained that the party benefited could be called upon to pay the rate; but even on this ground the liability of the Company was entirely out of the question. As regarded this Company, the commissioners were utterly powerless, as they had no jurisdiction over the bed of the river; for when the Act was obtained a large sum of money was paid to the corporation of the city of London for interfering with their property. He was aware that a dispute was pending between the Crown and the city of London as to that right, yet still that did not affect the present case, as the Commissioners of Sewers had no power over the bed of the river. The bridge stood upon eight piles in the river, and if there was any portion in their jurisdiction it was the abutment, which could only be liable to a small proportion of the charge levied, according to the charge for the eight piers. In support of his argument he referred to "Challis on Sewer Rates," and the case of "Masters *v.* Stall," where Lord Tenterden laid it down in his judgment, that if a party receives, or is likely to receive benefit, he was liable, but not otherwise. He also cited the cases of "Neave *v.* Werther," and "Tracy *v.* Taylor," as to the non-liability of the Royal Chelsea Hospital and the Millbank Prison; and the opinion of Lord Denman in giving judgment in the former case, who then said that there was an inconvenience, expense, and trouble in taxing public buildings, and that such taxes ought not to be imposed on public property. This bridge was public property, for by the terms of the Act of Parliament the Directors had only powers to levy tolls till the debt originally incurred was paid off, when the bridge would become the property of the public.

Mr. Hutton wished to know whether the Company paid the poor-rates?

The Chairman of the Company said most undoubtedly they paid poor-rates, being general rates for all property, but a sewer-rate was a very distinct case. It had been laid down that the commissioners might decree lands in default of payment of rates, but could it be argued that in default of payment they could seize upon Vauxhall Bridge?

Mr. Leslie.—Most certainly.

The Chairman, in conclusion, remarked that although former rates had been paid, yet they had always been paid under a protest, and on one occasion a distress had been put into their toll-house for the amount. As each rate, however, became a separate debt, they could not be prejudiced by any former transaction. He then recapitulated his arguments, and said that under the circumstances he humbly and confidently submitted that this species of property was not liable to sewers-rates, intimating at the same time that the Company had taken the opinion of counsel, who assured them they were justified in their resistance to them and were not liable.

Mr. Hutton was of opinion that the Company did receive benefit from the works of the commission, and held a beneficial occupation. The question as to bridges had been settled long ago.

Mr. Leslie said that even the Act for building Vauxhall Bridge, and under which the gentleman now before them held his office, contained a clause, that nothing therein should tend to alter or diminish the powers of the Westminster Commissioners of Sewers. If the approaches to the bridge were overflowed, the bridge itself would be useless.

Mr. Hertslet (the Clerk) said the Vauxhall Bridge approaches crossed one of the most expensive sewers in the Westminster district; and one part of the Vauxhall Bridge-road was three feet below high water, and but for the works of the commissioners this would be overflowed. If their sewer fell in the approach to the bridge would be stopped.

The Chairman of the Company wished to know, as the bridge stood in the river Thames, for what part they were to be rated? Surely, they would not call the Thames a sewer?

Mr. Leslie—Certainly it is, and the principal sewer of the metropolis. (Laughter.)

After a few words from Mr. Chadwick, and other

commissioners, a motion was proposed and seconded "That the rate be confirmed."

The resolution was put and unanimously carried. A vote of thanks was passed to the Speaker of the House of Commons for the accommodation he had afforded for the meetings of the court for the last seven months.

New Books.

Principles of Geometry, Mensuration, Trigonometry, Land-Surveying, and Levelling. By THOS. TATE, Mathematical Master of the National Society's Training College, Battersea. Longman, Brown, and Co., London.

WE have already had occasion to speak with commendation of Mr. Tate's labours in simplifying arithmetical and mathematical studies. The present little work is intended by the author "to supply teachers and practical men with a simple and concise, yet comprehensive system of theoretical and practical mathematics, embracing geometry, trigonometry, mensuration, surveying, and levelling,"—and appears to us, to a very considerable extent, to answer the intention. We can conscientiously recommend it to those who wish to acquire the description of knowledge of which it treats,—and of the importance of this knowledge, and the necessity for acquiring it, we cannot speak too strongly.

The chapter on the principles of estimating the value of artificers' work will be found very useful. The author remarks with truth:—

"The custom of estimating and contracting for work by the 'lump' is very little better than a modified form of gambling, by which the contractor may either make himself a fortune, to the injury of his employer, or render himself penniless, with all the moral evils resulting from hopeless and irretrievable pecuniary embarrassment. Teachers of elementary schools and mechanics' institutions would confer a great benefit on society, by teaching the simple and fundamental principles of estimation, rather than waste the time of their pupils in giving 'sums' which are only calculated to amuse the curious, without conveying any satisfactory information to the man who is engaged in the business of life. It is true that some of these 'sums' may exercise the mind, but it is an important fact, which should never be lost sight of, that those investigations which have the greatest practical bearing invariably form the most healthful and instructive exercise to the intellectual powers."

The Treasury of Natural History; or, a Popular Dictionary of Animated Nature. By SAMUEL MAUNDER, author of "The Treasury of Knowledge." Longman, Brown, and Co. London, 1848.

BY 800 closely-printed pages, in double columns, and 900 wood cuts, Mr. Maunder has given in this cheap "Treasury,' an amount of information, "in which the zoological characteristics that distinguish the different classes, genera, and species, are combined, with a variety of interesting information illustrative of the habits, instincts, and general economy of the animal kingdom," that cannot elsewhere be obtained for double the cost.

The whole of the articles are printed in alphabetical order, so that the name of the animal being known, its character and habits can be instantly ascertained, while those who wish to study this branch of natural history according to system, will find an introduction containing Cuvier's arrangement, with alterations to meet the present advanced state of the science, and references to the different genera described in the body of the work. It has all the advantages of a dictionary without its dryness, for it is interspersed with characteristic anecdotes and reflections, and is as pleasant for desultory reading as it is useful for precise inquiry.

The value of the book, which is really a monument of industry, will be increased to a large class of readers, if, in succeeding editions, the names be *accented*.

Rambles about Bath and its Neighbourhood. By JAS. TUNSTALL, M.D. Simpkin and Marshall, London; M. Pocock, Bath. Second Edition.

THIS is a very pleasant little book about an interesting neighbourhood, and is illustrated by a number of woodcuts. As it will doubtless become the standard local guide, it is desirable that the architectural descriptions should be a little more full and precise. A map of the environs of the city accompanies the work, and greatly increases its value.

Dr. Tunstall has worked *con amore*, and has thrown into his book much vigour and spirit.

Miscellanea.

THE SMOKE QUESTION.—A writer in the *Kentish Mercury* refers to an article on the smoke nuisance, which appeared in THE BUILDER a short time since. Speaking of the argand furnaces, he says—"It is a curious circumstance, which chemists can all well understand, that supposing we lived and moved in an atmosphere of coal gas, instead of one of oxygen and nitrogen, as at present, our gas manufactories would have to use not coal but manganese, or some other product yielding oxygen. Imagine two gasometers, one filled with coal gas, and having a gas chandelier hung from the roof, inside, and this connected by a flexible pipe with the second gasometer, filled with atmospheric air or oxygen; it is evident that the air or gas might be pressed from this second gasometer through the flexible tube, down the tubes of the chandelier, into the coal gas occupying the first gasometer. If flame, or the electric spark, were then immediately applied to the jets, on the instant of their so issuing from the chandelier, combustion would proceed as at present; only apparently atmospheric air would seem to be a combustible! This is just what is taking place in the argand furnaces; the air, so to speak, is showered into the volumes of coal gas, in innumerable small jets, ensuring a complete admixture, and rendering combustion so perfect, as entirely to avoid those dense clouds of smoke which disgrace the funnels of every steam-boat on the river, and all the large works in and about our otherwise favoured town."

THE COLOSSEUM.—We alluded some time ago to the magnificent panorama of "Paris" at this establishment, but scarcely said so much as its merits warrant. The striking events which have occurred in that city have been so minutely described by the daily papers, that the names of the streets and buildings of the once "gay" capital are become as familiar to our readers as those of our own city, and this renders a visit to the colossal panorama, where we at once recognise the localities of these scenes, doubly interesting. They are so vividly brought before the spectator, that he may fancy himself amongst them. The correctness of the picture is perfect. It is to be hoped that the exertions of the proprietors in producing such a subject of interest at the time, have been amply repaid by crowds of visiters. The extraordinary panorama of "London by Night," which was formerly exhibited there, is about to be removed to Liverpool, and we believe eventually to New York. It was displaced earlier than was intended, the exciting events in Paris having induced the proprietors to bring forward the present panorama of "Paris by Night." Mr. Bradwell is now engaged in preparing in their extensive new building in Albany-street, an entirely novel exhibition, to be called the "Cyclorama," in which a colossal moving panorama of great historical interest will be exhibited.

CHINESE CARVING.—The means by which the concentric balls which come from China can be carved one within the other, have long been matter of dispute. No join is to be discovered, but a recent traveller states positively that each ball is constructed of two pieces, the edges of which are so finely scraped down, that the edge of one hemisphere is made to overlap its counterpart with the greatest nicety. Thus one ball is easily inclosed within another. The joinings are then united by a peculiarly strong cement, aided by the employment of steam and pressure. He says that any one who wishes to make the expensive trial will soon ascertain the fact by applying a very powerful heat to one of these balls, which will open at the joints in due time.

VISION OF OBJECTS DURING RAPID TRANSIT.—At the meeting of the British Association, Sir David Brewster mentioned some curious facts relative to the vision of objects during rapid travelling. On looking out of the window of a railway carriage, for instance, if the eye be fixed on a row of stones or of palings, the image seems confused, and to be rapidly moving away; but if the axes of the eye be suddenly turned to some nearer spot, then the stones or palings are for an instant distinctly seen stationary. Sir David Brewster said he could not yet account for the phenomenon. Dr. Whewell and other members mentioned similar instances of optical illusions, with a view to explain the cause, but Sir David was of opinion that the cases mentioned were not parallel.—Of course it is merely by the rapidity with which one changing impression succeeds another in the eye that confusion of all appears in the endeavour to realize any one of them separately or distinctly. But is it not merely because, in the act of turning the focus of forcible impression from the more distant towards the nearer object, the impression of the last direct glance at the more distant is vanishing quietly without a repetition of the confusing succession of impressions on the same points, that the object engaging the attention is for an instant distinctly seen? And, morever, is it not more particularly by sudden *comparison* with the more rapidly shifting *relationships* of position in which the eye stands *to nearer than to more distant and more relatively fixed* points or objects, that the more distant do thus appear for an instant to be altogether *fixed*, the more so, of course, when *the attention* is fixed upon such objects, *distinctly seen*, or realised by the mind, in the midst of a field of confusion? We are convinced, however, that the *re-member*-ance of visual composite impressions *from within*, through the optic apparatus (*as in optical illusions*, which we some years since discovered the possibility of evoking at will, in susceptible persons, by the mere exercise of their own fixed attention, through the eye, upon the centre of a clear external surface, such as that of polished metal, or even a mirror, and especially in the gloom of the evening), has much more to do with such phenomena, and, indeed, with vision in general, than is ordinarily conceived.

COMPRESSED-AIR LOCOMOTION ON COMMON ROADS.—Another exhibition of Baron Von Rathen's locomotive took place on Thursday week, on the road between Putney and Wandsworth. This trial was for testing the apparatus for working the air expansively, which, however, was unfortunately leaky, and much of the power was lost. The carriage weighing 3 tons, and carrying 25 to 30 persons, is said to have started in good style, and kept pace with former experiments, as to time and distance. The patentee considers he has now solved the problem of the practicability of employing compressed-air in locomotion, and regulating it as to distance, speed, load, nature of road, &c. He is prepared, says the *Mining Journal*, to shew to mathematical demonstration, that he can embody sufficient power in this model air-carriage to carry 4½ tons, including carriage, 10 miles in one hour on common roads, or a train of 45 tons in the same time the same distance on a railway; but if carried out on a large scale on the latter, he contends that the system would effect a saving of 75 per cent. over the steam locomotive.

PROJECTING SHOP-FRONTS.—Last week, at Bow-street, Mr. Deane, a shopkeeper residing at 316, High Holborn, was summoned for having erected a shop-front which extended beyond the distance allowed by the 57th George III., sec. 72.—Mr. Parry, for the commissioners of pavements, stated the facts, and called Mr. Robert Southgate, the surveyor of pavements, who stated that one end of the shop front extended 11½ inches beyond the house, and the other end was 13½ inches. It was a new front, and he had given notice to Mr. Deane to alter it, but the notice had not been attended to.—By Mr. Bodkin, on behalf of Mr. Deane.—He gave notice that the front projected too far before it was finished. The old front had extended the same distance. In fact, the new one occupied exactly the same position. It was not the practice of the commissioners to interfere with old fronts which

exceeded the width allowed by law, as it would put many tradespeople to inconvenience; but when a new front was erected, they gave notice to have it so constructed as not to infringe upon the foot pavement. The old front at Mr. Deane's might have existed for more than twenty years. It was originally a gunmaker's shop, and witness remembered the old front as long as he could recollect anything in the parish.—Mr. Henry, on hearing this, said that, as the commissioners admitted that the front had existed for years in the same position as the new front complained of, the present one being in fact equivalent to a repair of the old one, he did not think they had any right to require Mr. Deane to remove it; he therefore dismissed the case. Mr. Parry wished to know whether he could appeal against this decision, but was informed by Mr. Henry that there was no appeal.

Transmutation of Metals.—Although the days of the alchemists are gone, the alembic of nature is still in operation, and changes in the material of which this globe is composed are continually going on; perhaps, in many instances, unobserved. We are led to these remarks from a specimen we saw lately of an umquhile cast-iron pipe, that had been used in this neighbourhood for carrying gas, and had been laid some years in a peat soil. The cast-iron was completely changed into black-lead or plumbago. It stained paper the same as a pencil. Its specific gravity had been reduced from the common gravity of cast metal, say 7.7 to 2.06. The original thickness of the pipe we have no means of ascertaining, but we should think it a good deal increased. Whether the carburetted hydrogen alone can produce such changes, or if it is a combination of that and the peculiar soil, we cannot tell; but as we believe the pipes in many places here have given way, those connected with the gas management should look into the matter, and see if something could not be applied to the pipes before they are put down, to prevent the constant loss and trouble attending this natural source of decay.—*North of Scotland Gazette.*

Cutler's Patent Lap-Welded Iron Tubes.—[Patentee, Job Cutler, C.E., Birmingham. Patent dated January 13, 1848, for certain improvements in welded iron pipes or tubes to be used as the flues of steam-boilers. Specification enrolled July 13, 1848.] The patentee states that the object of his invention is to produce lap-welded iron tubes or pipes, so formed as to give increased strength to those parts which are exposed to wear, without additional weight to the entire length of the tube, and thereby to obviate the evils to which boiler tubes are at present exposed. He proposes to effect this by making the internal diameter of the tube greater at one end than at the other, instead of its being the same or uniform throughout, as has hitherto been the case; the external diameter remaining, however, the same, and uniform throughout the entire length of the tube. The tube will, of course, be cylindrical upon the exterior, and conical upon the interior surface. The increased thickness of metal at the one end is to be drawn from the remaining portion of the entire length of the tube. And further, the operation is effected at one heat, so that the ductility of the iron of which the tubes are composed shall remain unimpaired. The *modus operandi* is as follows:—The patentee employs a series of grooved rolls, moved by suitable toothed wheels and a mandril, with a conical bulb or head, the stem of which is of increasing diameter towards the opposite end. The skelp, after being properly prepared, as is usual in the manufacture of lap-welded iron tubes, is heated and passed between the first of the series of rolls. It is then welded over the conical bulb, and forced at the same time over the stem of the mandril. This mandril is held by a grip, attached by a hinge thereto in a stop, so as to allow of its being lowered and passed, after the conical bulb has been removed, between the second series of rolls, the diameter of the groove of which is smaller than that of the first series. The tube, with the mandril still inside, is passed through the third series of rolls, the groove of which is smaller than that of the second series. The object of these successive rollings, after the skelp has been welded on the mandril, is to remove any irregularities upon either of the surfaces, and to make the edges of the tube perfectly smooth and uniform. The tube is then taken to the drawing bench, in front of which is a stop, and against which the pipe rests. The stop is furnished with a hole to allow of the passage of the grip of the mandril, which is held tight by a pair of pliers: and the bench being made to move while the pipe remains stationary, the mandril is withdrawn. When it happens that the mandril adheres too tightly to the tube, it is proposed to heat it in a muffle or furnace, then to cool the end which rests against the stop, and repeat the above operation, or to roll it cold between three rollers, as is usually done in straightening shafting.—*Mechanics' Magazine.*

The new Railway Works at Newcastle.—In their account of the late opening of the high level bridge across the Tyne, one of the local papers gives a description of the new works, to which we are indebted for the following particulars:—The approaches from the south and north are themselves extensive works, comprising bridges, viaducts, and embankments: the whole works contain upwards of 1,200,000 cubic feet of masonry. From the southern approaches the line is carried over a platform supported by cast-iron pillars, which rest partly upon sleeper walls, carried up to the height of the carriage roadway; and also upon three semicircular arches of 22 ft. 9 in. span, and one of 36 ft. 3 in., the north abutment of the latter being at Pipewellgate, and from which the cast-iron arches of the bridge spring: the cast-iron pillars are bound together at the top by longitudinal and transverse trough-girders. Between this point and the river pier on the south side, the cast-iron arch and roadway are nearly completed. From the middle of the first arch the line curves to a temporary timber viaduct erected along the west side of the intended bridge. The height of this viaduct is 120 ft. to the level of the rails; it is built upon piles, which are driven between thirty and forty feet into the bed of the river. On reaching the north side of the river the temporary line is curved into the permanent line at the bridge over the Close, there being a strong abutment, from which the cast-metal arches spring. The height of the arch over the Close is 103 ft. to the level of the rails, and the span is 36 ft. 3 in. This is the highest point of the line, on either the south or the north shore. The line then curves to the west, along the south side of the Castle Garth to Clavering-place, which is crossed by a skew bridge; and there is another skew bridge over the deviation of the Postern. The retaining walls of the embankment here form one side of the Postern and Bailiff-gate. The permanent line will run westward into the general station at the Forth as soon as it is completed. There is room all the way along this part for five lines of railway. The junction between the temporary and the permanent line is a little west of the Norman Keep, by the north side of which the permanent line proceeds eastward. The viaducts on the north side, as well as the high level bridge, are under the contracts of Messrs. Rush and Lawton, who have here set as much as 22,000 cubic feet of ashlar work. Having upwards of 200 parties to treat with, the works were set out in detached portions, yet no alteration or reconstruction was required at any one point.

Projected Works.—Advertisements have been issued for tenders by 21st inst., for the building of a Presbyterian Church at South Shields; by dates not specified, for the erection of two martello towers in Pembroke dockyard; and for the erection of a workhouse at Wokingham (extension of time); by 26th inst., for the erection of houses and carriage sheds for the South-Eastern Railway Company (extension of time); by 18th, for the erection of a coal store for the Poplar Union; by 20th, for paviours' and masons' works in St. James's, Westminster; by 29th, for the building of a police station and lock-up at Shotley-bridge (Durham); by 9th proximo, for making an oval sewer with branches, &c., at Bristol; by 3rd, for the construction and erection of a wrought iron swing bridge at Belfast; by 20th inst., for a supply of 70 tons of iron rails for the Cornwall Railway Company; by 20th, for a supply of British iron, best plate iron, &c., for the East-India Company; and by 28th inst, for a supply of stone ground or plate glass for the navy.

Prevention of Boiler Explosions.—Mr. Heath, C. E., and mine surveyor, of Hanley, in the Potteries, thus describes a regulator which he has adopted:—A water tank, formed of iron water-pipes—say 12 inches diameter—is placed conveniently to the boiler, with a cover bolted down steam tight, and from the top a communication with a reservoir. From the bottom a pipe proceeds into the side of the boiler above the usual water line, terminating in a rose end, and a valve opens outwards from the tank, weighted to any required pressure. The boiler is furnished on its top with two special valves, with weights inside, and covered by a box, to be kept locked. From this box a pipe proceeds to the upper part of the tank above the water line. Should the usual safety-valve become fast, or incapable of letting off sufficient steam, the valves in the box admit a rush of steam to the surface, when the pressure acts on the column of water, forcing a stream in the form of rain through the steam in the boiler, which it condenses, taking off the pressure, and the valves immediately close. The whole is thus self-acting, and only needs regulating the weights to the power required.

The New Suspension-bridge at Niagara Falls.—It makes the head dizzy to look at it, says the *Albany Journal*, and yet it is traversed with as much security as any other bridge of the same width. We were present while the workmen were engaged in hanging the planks over the fearful chasm. It looked like a work of peril, but it was prosecuted with entire safety. Not an accident has happened since the first chord was carried across the river at the tail of a kite. It is impossible to give the reader a clear idea of the grandeur of the work. Imagine a foot bridge 800 feet in length, hung in the air, at the height of 230 feet over a vast body of water rushing through a narrow gorge at the rate of 30 miles an hour. If you are below it, it looks like a strip of paper suspended by a cobweb. When the wind is strong, the frail, gossamer looking structure waves to and fro as if ready to start from its fastenings, and it shakes from extremity to centre under the firm tread of the pedestrian. We saw the first person pass over it—Mr. Ellet, the builder. His courageous wife soon followed him, and for two days hundreds, attracted by the novelty of the thing, took the fearful journey. Strange as it may seem, there were those who had no hesitation to slide over the awful chasm in a basket, upon a single wire cable, who could not be induced to walk over the bridge. When you find yourself suspended in the air, with the roaring, rushing, boiling Niagara 250 feet below you, if your heart don't flutter, you will have nerve enough to swing over Vesuvius!

Gas in Cheltenham.—A correspondent writes as follows:—The Cheltenham Gas-light Company make the following charges—Under 5,000 cubic feet, 7s. 6d. per 1,000, 5 per cent. dividend; if 5,000 and under 10,000, 10 per cent.; if 10,000 and under 50,000, 15 per cent.; if 50,000 and under 200,000, 20 per cent.; if 200,000, 25 per cent. The company charge 10s. per annum for the meter; and all service-pipes and fittings are executed by a person authorised by them. Their customers are obliged to pay upon their estimated consumption each half-a-year in advance—as good as a 5 per cent. added to the charge. The multitude of smaller consumers have no deduction of per centage, though they equally would be obliged to pay in advance. The Cheltenham Gas Company would no doubt declare a small dividend upon their outlay, and attempt to prove the justice of plundering the public by charging highly for a *costless article*. So did the gas makers in Liverpool, where the charge, I believe, was 10s. per 1,000 cubic feet, till they reduced the price to 4s. 6d. per 1,000 cubic feet; and now they receive 10 per cent. on their capital. The price of the best coals at Cheltenham is 16s. per ton.

Oaks.—The following are said to be the largest British oaks which we have on record:—The Cowthorpe, in Yorkshire, which measured 48 feet in circumference at a yard from the ground; the Shrewsbury, 44 feet at the bottom; the Essex, 36 feet at the bottom, and known by the name of "Fairtop;" and the Hatfield, 38 feet circumference and 120 feet high.

TO CORRESPONDENTS.

"*Five Years' Sub.*"—Write to Mr. Lockhead, Milton, near Gravesend. The perforation of glass for ventilation is effected as follows:—In forming plates of glass, the glass, when in a semi-fluid state, is poured from the pot on to the casting table—the stream being followed by a pressure roller, for the purpose of flattening it; and while the glass is in a plastic state, a metal mould, with teeth, or projectious, on its under side, according to the pattern required, is applied to the surface, forcibly pressed down, and left in that position until the glass has set; after which it is to be removed, and the glass will be found to be perforated, in corresponding shapes to the projections on the mould.

"*Fides.*"—The competition is open to all. A letter to the secretary, "Adelphi, Strand," will obtain full particulars.

"*J. E.*" (Liverpool).—Ditto.

"*Enquirers.*"—Give notice to the district surveyor: it will be his duty to see it remedied.

"*B. B.*" (Chester).—We should like to have further particulars: how and where tried; what time? As respects preserving the service of old red sandstone, see notice of Hutchison's patent in present number.

"*A Student.*"—Coal ashes make an excellent mortar with lime, but need more labour in the mixing than sand.

"*A Subscriber.*"—We should be happy to receive drawings of such.

"*Chimneys.*"—A shaft was carried at Wigan to a height of 420 feet.

"*Received.*"—"W. F.," "W. B." (Brighton); "J. D.," "E. N.," "J. W.," "P. P.," "G. S." (without a description of the trap the statements are valueless); "R. W." (see below); "J. L.," "J. H.," "G. J. R." (shall appear); "W. W.," "K. L.," "W. D.," "S. W." (we shall be happy to look at it); "Constant Reader;" "J. L.," Edinburgh (the statement has already appeared); "History of the New Palace of Westminster," Parts 1 and 2 (Warrington and Son, Strand); "Miscellaneous Mathematical Papers of Oliver Byrne" (Maynard, Leicester-square).

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.

ADVERTISEMENTS.

RIDER'S RAILWAY BRIDGE. — To Railway Companies.—A PROSPECTUS of the above newly-invented IRON TRUSS RAILWAY BRIDGE will be forwarded, and contracts entered into, or licenses granted for its erection, on application to Mr MOULTON, Bradford, Wilts.

MACHINERY SUPERSEDED.—Architects, Builders, and others may have any quantity of Carvings executed at the same rate, and with as much expedition, by manual labour as by machinery, by applying to F. IRISH, Carver, Windmill-street.
N.B. Designs made and estimates given without delay. Patterns carved for casting in brass, iron, or other metals.

TODD'S PATENT METALLIC PROTOXIDE PAINT, for Stucco Fronts, Brickwork, Iron, Wood, and every description of Painting. This Paint has been most severely tested for nearly four years, by men of great experience, and has been extensively used under the superintendence of Architects, Engineers, and Surveyors of the greatest eminence.—Orders to be addressed to Mr. B. TODD, Patentee, 23, Dean-street Soho, London.

RAIN-WATER PIPES, Heads, Shoes, and Elbows, Half-round and O G Gutters, Sash Weights, Railing Bars, Sink and Stable Traps and Gratings, Air Bricks, Coal Plates, &c.; Gas and Water Pipes from 1½ inch. to 12 in. in diameter, with Bends, Branches, Syphons, and Lamp Columns; also Hot-water Pipes, with all the usual connections. A large Stock of the above Castings at JONES'S Iron Bridge Wharf, No. 6, Bankside, Southwark.

By Her Majesty's Royal Letters Patent.

BAILLIE'S PATENT ROUNDED RIM LOCKS,
WITH SECRET AND SECURE FIXINGS.

THIS CHEAP and USEFUL ARTICLE obviating the unsightly appearance and insecurity of the common rim lock, can be obtained from the Manufacturers, Messrs. CARPENTER and TILDESLEY, Willenhall; or from the sole Agent, Mr. JOHN FAULKNER, Ironmonger, 67, St. Martin's-le-Grand, London, opposite the new Money-Order Office.

FLEXIBLE INDIA-RUBBER PIPES AND TUBING,
For Railway Companies, Brewers, Distillers, Fire Engines, Gas Companies, Gardening and Agricultural purposes, &c.

THE PATENT VULCANIZED INDIA- RUBBER HOSE-PIPES are made to stand hot liquor, and acids without injury—do not become hard or stiff in any temperature (but are always perfectly flexible) and as they require no application of oil or dressing, are particularly well adapted for locomotive engines, railway cranes, fire engines, pumps, gas, beer engines, gardens, and all purposes where a perfectly flexible pipe is required. Made all sizes, from ¼ inch bore upwards, and of any length to order. Vulcanized India rubber garden hose fitted with brass-taps, copper branch and roses complete, ready to be attached to pumps, water-butts, or cisterns. Sole manufacturer, JAMES LYNE HANCOCK, Goswell-mews, Goswell-road, London.
N.B. Vulcanized India-rubber washers of all sizes for joints or hot-water and steam pipes, and vulcanized sheet rubber any thickness for all kinds of joints, and other purposes.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS, Manufactory, 96, REGENT-STREET and 121, CHANCERY-LANE. Patent sealed on the 4th day of February, 1845, for Fourteen Years, for Improvements in Revolving Shutters of WOOD and IRON, consisting of Six Methods of Raising and Lowering Shutters, without Machinery, and Two for Hinging and Sheathing the Edges of Wood Laths with Iron.—The Patentee having fixed up some hundreds, will feel pleased in forwarding the Testimonials of Architects, Principals of large Establishments, and others, having them now in use, which fully guarantees the Patentee in stating they are beyond dispute superior to any other Revolving Shutter for durability, security, and simplicity, without the use of cog-wheel worm and screw gear, or any other complicated machinery employed by other makers.

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Patentees of
REVOLVING IRON AND WOOD SAFETY SHUTTERS,
and of
ORNAMENTAL METALLIC SASH BARS, MOULDINGS, &c.,
IN BRASS, COPPER, ZINC, &c.
FOR SHOP-FRONTS, SKYLIGHTS, &c.
Shop-fronts completely fitted and fixed in a superior style, either plain or ornamental, also glazed with best plate glass. Strong moulded stallboards handsomely engraved. Metal works and machinery of all kinds in connection with banking-houses, shops, warehouses, &c. &c.
B. and C. challenge competition as to either quality or price.
Designs furnished and estimates given.
IMPROVED PATENT BENCH AND FLOORING CRAMPS FOR BUILDERS.
SOLE LICENCEES FOR MARVIN and MOORE'S PATENT DIAGONAL GRATINGS.
Office of the Patentees, 26, Lombard-street, London; and at the Works, Deptford, Kent.

PERSONS desirous of obtaining LOANS from 50*l.* to 250*l.* upon approved personal or other security, are invited to examine the principles of the BRITISH MUTUAL SUBSCRIPTION LOAN ASSURANCE CLASSES. Prospectuses and every information may be obtained on application at the British Mutual Life Office, 17, New Bridge-street, Blackfriars.
Rules, 6*d.* each copy.
CHARLES JAMES THICKE, Resident Sec.

ARCHITECTS', ENGINEERS', and BUILDERS' FIRE and LIFE INSURANCE COMPANY, 69, Lombard-street, London.
CHAIRMAN—SYDNEY SMIRKE, Esq., A.R.A.
TRUSTEES.
Thos. Leverton Donaldson, Esq. | Anthony Salvin, Esq., F.S.A.
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The rates for both Fire and Life Insurance are as low as can with safety be taken. Those for Life Insurance may be paid either yearly, half-yearly, or quarterly; one-half the annual premium may be left unpaid for seven years, or one-third till the end of life. Thus large sums may be insured at the smallest present outlay.
Prospectuses, forms of proposal, &c., may be had at the Office, 69, Lombard-street, or of any of the Agents.
AGENTS WANTED for those towns for which appointments have not yet been made. JOHN REDDISH, Manager.

SCOTTISH PROVIDENT INSTITU- TION, for MUTUAL LIFE ASSURANCE by MODERATE PREMIUMS. Incorporated by Special Act of Parliament. Established in 1837.
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London: 12, Moorgate-street, Bank.
The Scottish Provident Institution is the only office which combines the advantages of Mutual Assurance with Moderate Premiums. The Premiums are, at early and middle ages, about 20, and in some instances 25 per cent below those of most other Mutual Offices.
This Society being Mutual, is free from the necessity of a nominal, or the burden of a real capital. Thus dividends and similar charges on the funds are avoided.
The peculiar and leading advantages of this Office may be thus briefly stated:—
PREMIUMS 20 or 25 per cent. LOWER than in most other similar Offices, at early and middle ages. Thus, the premium of the Equitable, at age 30, for 1,000*l.*, would, at once, in this Office, assure 1,287*l.*; which is obviously equivalent to a present and certain bonus of 287*l.*, exclusive of prospective profits.
Premiums may be wholly paid in one sum, or in 7, 14, or 21 annual payments.
The 21 years' scale little exceeds that of most Offices for the whole of life. (See table below.)
Exemption from entry charges, &c.
The society is bound by its deed of constitution to make liberal provision to members wishing to discontinue their payments.
The whole profits are divided among the assured exclusively, on a principle peculiar to this office, and which is at once equitable, secure, and especially beneficial to good lives, being entire for those members who survive the period at which their premiums, with accumulated interest, amount to the sums assured, it is evident that much larger profits may thus accrue to the participators than by the usual system of other offices, even though their premiums are considerably higher.
More detailed illustrations of the effects of this principle may be obtained at the offices.
Specimen of Premiums for 100*l.* for whole Life and for Twenty-one Years. (These rates include a prospective share in the whole profits of the institution.)

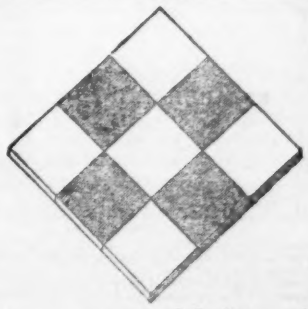
Age	Payable for whole of Life.	Payable for 21 years only.	Age	Payable for whole of Life.	Payable for 21 years only.
	£ s. d.	£ s. d.		£ s. d.	£ s. d.
25	1 18 0	2 10 8	36	2 8 2	3 0 11
26	1 18 6	2 11 3	37	2 9 8	3 2 2
27	1 19 2	2 11 11	38	2 11 3	3 3 6
28	1 19 11	2 12 10	39	2 12 11	3 4 10
29	2 0 8	2 13 8	40	2 14 2	3 6 4
30	2 1 6	2 14 6	41	2 15 8	3 7 10
31	2 2 6	2 15 5	42	2 18 8	3 9 5
32	2 3 5	2 16 4	43	3 0 11	3 11 1
33	2 4 6	2 17 5	44	3 3 3	3 12 10
34	2 5 7	2 18 6	45	3 5 9	3 14 9
35	2 6 10	2 19 8			

All necessary information and forms may be obtained on application at the principal offices in Edinburgh, London, Glasgow, and Manchester, or from any of the provincial agents.
WILMER OWEN HARRIS, Secretary for London.
Office, No. 12, Moorgate-street, September, 1848.

ENCAUSTIC, VENETIAN, BATH, and other PATENT TILES, and MOSAIC PAVEMENTS, may be obtained in great variety at MINTON and Co.'s Warehouse, 9, Albion-place, Surrey side of Blackfriars-bridge; and at their Manufactory, Stoke-upon-Trent, Staffordshire.—N.B. Slabs and Tiles for Fireplaces, plain and ornamental; Door Furniture, &c.

TO BRICK AND TILE MAKERS.

THE AINSLIE BRICK and TILE MACHINE COMPANY (James Smith, Esq., of Deanston, Chairman) invite attention to their improved Brick and Tile Machines, which are to be seen at work at Alperton, and at the Company's office, 193*a*, Piccadilly, from Ten a.m., to Five p.m. Mr. Robert Scrivener, who has been appointed manager in the room of Mr. John Ainslie, will show the machines at the works at Alperton, which is within a mile of the Sudbury station of the London and North-Western Railway, and two miles of the Ealing station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193*a*, Piccadilly.—March 1, 1847. These machines may also be seen at Mr. Slight's, Leith-walk, Edinburgh; Mr. Robert Boyle's, Ayr; Mr. Lawrence Hill's, 135, Buchanan-street, Glasgow; Mr. Robert Charles', Mill-hill, Leeds; Messrs. Penny and Finch's Penkridge, Staffordshire; Messrs. Drummond and Son's, Dublin; and Mr. John Connor, Newton Lindvady, County Derry.



In London. At Tunstall
Blue and Red Squares, 6" and 1" at 2*s.* 10½*d.* per yard, and 1*s.* 5½*d.*
Ditto ditto 7½" and 1½" at 2*s.* 10½*d.* per yard, and 1*s.* 7½*d.*
Ditto ditto 9" and 1½" at 3*s.* 1½*d.* per yard, and 1*s.* 9½*d.*

ILLUSTRATED TRADE LISTS GRATIS, containing much information useful for reference, also Testimonials respecting a MATERIAL which, when well wrought, is probably superior to every other for drains or conduits (as glass, or artificial glazes, corrode), for ridges, hips, valleys, and every part of roofs, for plain or chequered paving, for erecting sea-walls and other strong works, &c. To be had GENUINE of THOMAS PEAKE (proprietor of "Peake's Terro-Metallic"), No. 4, Wharf, City-road Basin, London; also, at the Tileries, Tunstall, Staffordshire. Articles would be supplied to any extent, and dispatched to any part of the world. The lists contain prices by measure as well as by number. Letters to be prepaid, and to say if the London or Staffordshire prices are wanted.

REDUCED PRICES.
WILLIAM CLEAVE, of Wilton-road, Pimlico Basin, begs to acquaint Builders and the Trade that he has now on hand, at his Manufactory (the first of its kind ever established), a very large Assortment of Dry and Well-seasoned FLOORING BOARDS and MATCH BOARDING of all sorts, from ¾ inch to 1½ inch thick, planed to a parallel width and thickness, and at greatly Reduced Prices. Also, Timber, Deals, Oak Planks, Scantlings, Sash Sills, Moulding prepared by Machinery, Laths, &c.
Apply at W. CLEAVE'S Flooring Manufactory and Timber Yard, Wilton-road, Pimlico Basin, late C. MOORE and SON.

A REDUCTION in the PRICE of FLOOR BOARDS.—ALFRED ROSLING begs to inform the Trade and Consumers generally, that he has REDUCED the PRICE, and keeps constantly in stock a large and very general assortment of Prepared Floor Boards and Matched Boarding, laned to a parallel breadth and thickness, and fit for immediate use; also a variety of machine-prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship.—Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground-street, Blackfriars.

T. ADAMS (late S. DARE), MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery. Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.

MAHOGANY.—Twenty Thousand Pounds' worth of dry HONDURAS and SPANISH MAHOGANY and WAINSCOT always on hand, suitable for Builders, Pianoforte Manufacturers, Cabinet and Coachmakers, Railway Contractors, and all persons requiring well-seasoned materials at moderate prices, at T. C. WILSON'S Timber-Yard, 13, Greek-street, Soho.—T. C. WILSON adopts this mode of informing the public where they can procure dry and superior articles, in consequence of the numerous complaints of parties having bought wood elsewhere as seasoned, where upon working the same it has proved otherwise.

MUIRS PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.
TIMBER of any size, PLANK, DEALS, and BATTENS, &c., Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.
Address to HENRY SOUTHAM,
Saw Mills,
Gillingham-street, Pimlico.
N.B. Estimates given for Sawing and Planing.

WOOD THOROUGHLY SEASONED in DAYS instead of YEARS, by DAVISON and SYMINGTON'S PATENTED PROCESS, at the Patent Desiccating Company's Establishment (for Seasoning, Sawing, and Planing Wood), at the Grand Surrey Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe. The new process ensures the entire removal of moisture, hardens the gums, prevents further shrinkage, and strengthens the fibre.—For scale of prices, or license to work the patent, or any further information, address, post-paid, or apply to W. H. TANQUERAY, Secretary.
The Patent Desiccating Company's Offices are REMOVED from 28, New Broad-street to No. 41, GRACECHURCH-STREET, CITY.

TIMBER-PRESERVING COMPANY.— (PAYNE'S PATENTS for the PRESERVATION of TIMBER AGAINST DRY ROT, FIRE, RAVAGES of WORMS, &c.)—The above Company are ready to enter into arrangements for the Preparation of Timber at any of their undermentioned stations, viz.:—

Whitehall Wharf, Westminster,	Lynn,
Fleetwood-on-Wyre,	Staines,
Wisbech,	Guildford,
Gateshead,	Southampton,
Barnstaple,	Hartlepool,
Leicester,	Darlington;

and they will erect the necessary apparatus wherever there is a considerable quantity of timber to be prepared.—Further particulars, with prices, may be obtained at the London Works, Whitehall Wharf, Cannon-row, Westminster.

THE TIMBER-PRESERVING COM- PANY.—At the First General Meeting of the Company, held at the Company's Offices, Whitehall Wharf, Cannon-row, Westminster, on Friday, September 8, 1848; GEORGE BURGE, Esq., in the chair. The Secretary having read the advertisement convening the meeting, the following resolutions were unanimously adopted:—

1. That the common seal of the Company be affixed to the register of shareholders.

2. That the following gentlemen be the Directors of the Company, viz.:—

George Burge, Esq.	Charles Payne, Esq.
Henry Hitchins, Esq.	Charles Browne Smith, Esq.
Frederick Hitchins, Esq.	John Neville Warren, Esq.
Edward Loder, Esq.	William Warren, Esq.

That the annual sum of 436*l.* 16*s.* be paid to the Directors for their services, as from the 1st May, 1848, and that such sum be apportioned among them in such manner as they may think fit.

3. That Mr. William Bridges and Mr. William Bunce Greenfield be appointed auditors to the Company, and that they be paid the annual sum of ten guineas each for their trouble.

4. That the directors be authorised to appoint a secretary, and to pay him such salary as they may think fit, not exceeding 400*l.* per annum.

5. That the directors be authorised to order the common seal of the Company to be affixed to the deeds and instruments necessary for vesting in the Company the letters patent, warehouses, workshops, yards, premises, machinery, plant, materials, stock, property, and effects, purchased on behalf of the Company from Messrs. Payne and Loder, and for securing to Messrs. Payne and Loder the purchase-money or other consideration for the same.
GEORGE BURGE, Chairman.

That the thanks of the meeting be given to the chairman for his able conduct in the chair.
R. C. DUKE, Secretary.

TO GAS COMPANIES, Gas Fitters, and Gas Consumers.—N. DEFRIES, 10, Hampstead-road, 67, St. Martin's-lane, and 118, Argyle-street, Glasgow, having proved by eight years' experience his DRY METER to be unrivalled, begs to say, that nearly 20,000 are now in use, defying injurious Gas and are never affected by Heat, Damp, or Frost. They may be obtained on Hire of all the Gas Companies who supply Meters to their Customers.—Testimonials of great value may be obtained at either Factory.

WHITE'S PATENT HYDRO-CARBON GAS.—The advantages of this Gas are as follows:—It does not require any purification; the cost is much less than the ordinary coal gas, and the apparatus necessary for its production not half the price; it is perfectly free from sulphuric acid, sulphurous acid gas, ammonia, &c. &c., and giving a most brilliant light, not injuring the health of the inmates, nor destroying the goods in the house where it is made and consumed. It may be seen in full operation at the Royal Polytechnic Institution, Regent-street, where its properties are explained daily by the Professor Ryan. Parties requiring this cheap and beautiful Gas for lighting towns, factories, or dwelling-houses, may procure any information from the Patentee, Mr. STEPHEN WHITE, or from Mr. GEORGE FOWLER, at the Patent Hydro-Carbon Gas Offices, No. 9, Lincoln's-Inn Fields.

TO DRAUGHTSMEN AND CIVIL ENGINEERS.

H. MORRELL, BLACK LEAD PENCIL MANUFACTURER, No. 149, Fleet-street, London.

These Pencils are prepared in various degrees of hardness and shades.

H H H H for drawing on wood.	F F light and shading.
H H H for architectural use.	F for general use.
H H for engineering.	B black for shading.
H for sketching.	B B ditto ditto.
H B hard and black for drawing.	B B B ditto ditto.
M medium.	B B B B ditto ditto.

Sold by all the principal Stationers in town or country.

GREAVES'S BLUE LIAS LIME and LIAS CEMENT.—Messrs. RUTTY and VEREY'S, 2, South Wharf, Paddington Basin. Works at Stratford-on-Avon and Southam. GLAZED STONE WARE DRAIN PIPES on hand.

ATKINSON'S CEMENT.—WILLIAM WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue Lias Lime Works, CHURCH STREET, ROTHERHITHE, Sole Consignee for Atkinson's Cement.—Cement Chimney-pots of every pattern.

KEENE'S PATENT MARBLE CEMENT forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

PORTLAND CEMENT.—J. B. WHITE and SONS, request reference to Nos. 284 and 285, pages 343 and 351, of "The Builder," for accounts of experiments on the strength of Portland Cements.—These trials show that for the practical purposes of building, the connecting power of Portland Cement exceeds that of Roman Cement in the proportion of four to one; thus marking it as the most fit material for turning the brick arches of Railway bridges and other works of a critical nature, while its firm adhesion to most sorts of stone, as well as bricks, combined with its eminently hydraulic properties, adapt it for such purposes as the building of sea and wharf walls, and the lining of reservoirs, cisterns, baths, &c. Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

PORTLAND CEMENT, solely Manufactured by W. ASPDIN, Son of the Patentee. This Cement has been proved, for upwards of twenty years in the Thames Tunnel, to resist the action of water; it is stronger in its cementitious qualities, harder, and more durable than any other description of Cement; it does not vegetate, oxydate, or turn green; nor is it affected by any atmospheric influence whatever the climate, resisting alike the action of frost and heat. It is manufactured to set in from five to sixty minutes. For all purposes that Cement is applicable the Proprietors challenge competition.—Orders received by Messrs. ROBINS, ASPDIN, and Company, at their Manufactory, Northfleet, Kent, and their Wharf, Great Scotland-yard, Whitehall; also by their Agent at the Depôt, 1, Back Goree, Liverpool.

JOHNS and CO.'S PATENT STUCCO CEMENT and PAINT.—The attention of Architects, Builders, Plasterers, Painters, Merchants, and the Public generally is solicited to the many advantages attached to these celebrated Materials, which, for their appearance, durability, imperviousness, utter resistance to frost or heat, and general economy, distinguish them from all other cements and paints, and fully justify the confidence reposed in them, as shewn by the numerous testimonials received from public bodies and private individuals of the first importance.—Prospectuses and particulars may be obtained from the sole agent, PHILIP HARE, at the Warehouse, 22, Steel-yard, Upper Thames-street.

PARIAN CEMENT, used as a Stucco, cannot easily be distinguished from Statuary or Parian Marble. It is fit for all the purposes of that beautiful material, and does not crack, warp, or efflouresce in any degree. The fine quality will incorporate with the most delicate colours; is adapted to encaustic work, fresco, imitation of marble, and the most elaborate embellishment. So perfect are its setting or crystalizing properties, that the coarse quality, when applied to newly-built or damp walls, may be immediately polished, painted, or papered; and rooms rendered habitable before the materials ordinarily used would begin to dry.—Manufactured by CHAS. FRANCIS and SONS, Roman Cement Works, Nine Elms, London.

MARTIN'S PATENT FIRE-PROOF and ORNAMENTAL CEMENT—REDUCTION of PRICE.—The Patentees beg to inform their Friends and the Public that they have made arrangements which enable them to offer this invaluable cement at a considerably reduced price. It has now been before the public so many years, and has obtained so high a standing in the estimation of all who have used it, that it is unnecessary to comment on its merits. The Patentees, however, feel called upon to observe, that by its use—from the greater amount of surface which a given quantity will cover, and the small amount of labour required in working it, a saving of 25 to 30 per cent. is effected as compared with other cements for internal use. Specimens shewing its beauty, hardness, and applicability to all plain and ornamental purposes, may be seen; and the Cement in any quantity obtained of the Patentees, Messrs. STEVENS and SON, at their Plaster and Cement Works, 189, Drury-lane, London.

TO THE BUILDING PUBLIC.

FIRST-RATE ORNAMENTS in ROMAN and other CEMENTS, and PLASTER of PARIS, at reasonable prices, consisting of Vases, Balusters, Capitals, perforated Panellings, Cantilevers, Brackets, Trusses, Wreaths, Scrolls, Masques, Heads, Figures, Friezes, Gothic and other Chimney-Shafts, Soffits, Bed-moulds, Pateras, &c., &c., 36-inch Centre, Flowers fixed complete, 21s. each, smaller in proportion. An assortment of Shop-front Trusses always ready for fixing.—JOHN HERBERT and SON, Modellers, &c., 43, Parker-st., Drury-lane.

PLASTER or GYPSUM QUARRIES. —BROWN and RAGSDALE, Newark-upon-Trent, in addition to their old, have just opened some new Quarries of Plaster, the quality of which is excellent, and have now on hand for sale a large stock of Best White Rock, Second White, Best Grey Rock, and Second Grey.—Freights to Gainsborough, 2s.; Hull, 4s. per ton. An order is solicited from those who have not yet purchased at first hand.—Newark, August, 1848.

SLATE SLABS, of the finest quality, planed on both sides, at reduced prices, may be had of Messrs. JONES, Bangor Wharf, Pimlico, and 18 Wharf, Macclesfield-street, City-road Basin. Enamelled Chimney Pieces, in superior style, Washhand-stand and Table-tops, &c., are in daily production at the above places. A large assortment of best Bangor Roofing Slates are constantly kept on hand, at prices considerably reduced.

MAGNUS'S ENAMELLED SLATE.—Under the patronage of Her Majesty, Prince Albert, the Duke of Wellington, and the principal of the Nobility, the most eminent Architects, Builders, &c. &c.—This beautiful material has been introduced into Buckingham Palace, the drawing-rooms at Osborne, Apsley House, Strathfieldsaye, &c. &c., and it is now taking the place of marble in the mansions of the nobility generally. It is also extensively used in Government offices, the principal railway stations, and other public buildings. It can only be distinguished from real marble by its superior brilliancy of polish, and it is more durable, and less liable to chip at the edges, than marble. The choicer productions, such as black and gold, sienna, jasper, verd antique, jet black, &c. are not more than one-third of the price of marble. Among the articles manufactured at the Pimlico Slate Works are chimney-pieces, consoles, billiard and table tops of all descriptions, pedestals, pilasters, columns, plinths, tazzas, mural tablets, baths, wash-stand tops, &c. &c. Cisterns, dairy shelves, flooring and plain slate-work in general executed on exceedingly moderate terms. Welsh slate slabs, of the finest description, at very reduced prices.—N.B. The trade supplied with whole cargoes, self-faced, or planed on one or both sides, direct from the quarries.—A book of prices will be forwarded on application to Mr. MAGNUS, Pimlico Slate Works, Upper Belgrave-place, London.

STIRLING'S BELVEDERE SLATE WORKS, Belvedere-road, Lambeth.—A reduced list of prices of the best WELCH SLATE SLABS, planed both faces, will be sent on application (post paid) being made, and inclosing a postage stamp. The prices are under those advertised for inferior slates.

PAVING, 2s. 9d. PER SQUARE YARD, Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 15, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

PATENT METALLIC LAVA, WHITE AND ORNAMENTAL, for the interior of Churches, Museums, Halls, Vestibules, Conservatories, &c. &c.; BROWN, for Foot Pavement, Flooring, covering Railway Arches, Terraces, Roofs, &c. &c.—Manufactured only by Messrs. ORSI and ARMANI.—Specimens and list of prices can be obtained at the offices, 6, Guildhall Chambers, Basinghall-street, City.

ANSTONE STONE WHARF, STANGATE.—Mr. GRISSELL has the honour to inform Architects and Builders that he has made arrangements for the SUPPLY of the ANSTONE STONE for all building purposes, and which can now be seen at the above wharf by application to Mr. W. G. WARDLE, of whom every necessary information can be obtained.

August 30, 1848.

ANSTON STONE, used for Building the New Houses of Parliament.—W. WRIGHT and Co. beg to inform Architects, Engineers, Builders, and others, the Anston Stone can be supplied in any quantity on the shortest notice. This valuable stone, so celebrated for its durability, colour, and texture, is well known, having been selected in preference to all others, by the Commissioners of Woods and Forests, for building the New Houses of Parliament. It is very superior for Monuments, Tombs, &c. &c.

W. WRIGHT and Co. deem it important to state the Anston Stone offered by them is from the same bed as that from which the New Houses of Parliament are being constructed, a hedge alone being the division of the properties of the Duke of Leeds and W. Wright and Co.

Facilities are at hand for forwarding it to all parts of the Kingdom.—Application to be made to W. WRIGHT and Co., Anston, near Sheffield, Yorkshire.

CAEN STONE.—Original Sufferance Depôt, Norway Wharf, Greenwich.—W. TUCKWELL, Caen Stone Quarry Proprietor and Importer, begs to invite the attention of Architects, Surveyors, Builders, and others to the Stock of CAEN STONE on his Wharf; he is prepared by constant arrivals to execute orders to any extent on the most advantageous terms.—Shipments made to any port direct from his quarries at Caen.

N.B. Orders received at the Wharf, as above; also at the Offices of Mr. R. A. WITHALL, Surveyor, 80, Cheapside, where further information and samples may be obtained.

CAEN and AUBIGNY STONE.—LUARD, BEEDHAM, and Co., Proprietors of extensive Quarries of best Caen Stone at Allemagne, and Aubigny Quarries, near Falaise, Normandy, beg respectfully to invite attention of Archæologists, Architects, Engineers, Surveyors, Builders, and others to the above. Caen Stone is too well known to need special notice. Aubigny Stone, from its fineness of grain, hardness of texture, beauty of colour, freedom from vents, shell, and great durability, ranks amongst the first for building and engineering purposes, hall paving, staircases, sculpture, tombs, cemetery works, and general masonry. L. B. and Co. have for many years supplied large quantities to various parts of the continent for public works, light-houses, &c., under the patronage of the Royal Engineers. Orders executed to all parts of the United Kingdom with despatch direct from the quarries. A large stock of seasoned Caen and Aubigny Stone always on hand, at Caen Sufferance Wharf, Rotherhithe, where samples and information may be obtained.—Office, 18, Southwark-square, Southwark-bridge-road, Southwark.

SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Pimlico, begs to inform Architects and the Public that MASONS' WORK, in all its branches, is executed on the most reasonable terms, in such manner as must meet the views of his Patrons.

GOTHIC WINDOWS and the more elaborate Works produced at a reduced cost, on a system that combines economy with the required accuracy and truthfulness.

FONTS from 5l. upwards.

MONUMENTS and TOMBS in great variety of design.

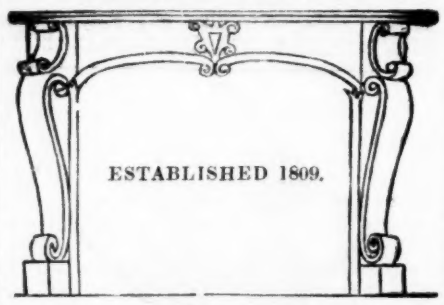
The most varied Assortment of ORNAMENTAL, PLAIN, and ENCAUSTIC TILES, in Town, on view.

Stone-box Chimney-pieces, from ..... 12s.
Vein-Marble " " ..... 40s.

RESTORATIONS Estimated for (in which Branch S. C. has had considerable practice). Dairies fitted up, &c. &c.

Goods Landed, Housed, and Delivered.

BUILDERS, MASONS, &c., will find a considerable reduction in the price of Marble Work, at the WESTMINSTER MARBLE WORKS, from the great improvements made in Working and Polishing Marble by Patent Machinery. All orders are executed in a style entirely unequalled.



The business of this establishment is so arranged as to be a great advantage to the trade, from the great variety of Chimney-pieces and Monuments always on view, and sold at a very low charge; also the liberal commission always allowed to the trade.

Westminster Marble Company, Earl-street, Millbank.

TERRA-COTTA, or VITRIFIED STONE WORKS, King Edward-street, Westminster-road, London.—M. H. BLANCHARD, from late Coade's Original Works, Belvedere-road, Lambeth, begs to inform the Nobility, Gentry, Architects, and Builders, that he has re-established the manufacture of that invaluable material, which has been successfully adopted by our eminent Architects and others, in the adornment of our noblest buildings, nearly 100 years has proved the imperishable nature of the material, the specimens of those times now exhibiting all their primitive sharpness.

Groups, statues, friezes, capitals, panelling, pinnacles, finials, terminals, Tudor, and other chimney shafts, balustrading, fountains, fonts, tazzas, vases, coats of arms, devises, and every description of architectural ornament, at prices in many instances nearly half the cost of stone.

Specimens of the material to be seen at the Office of "The Builder," 2, York-street, Covent Garden, and at the Works.

TO ARCHITECTS, BUILDERS, AND BRICK-MAKERS.

PUMPS of Superior CONSTRUCTION, bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories, Squares, Market Places, Roads, Gardens, and for Liquid Manure. BRICK-MAKERS' PUMPS, in Wrought and Cast Iron, HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth, SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for Hire.

BENJ. FOWLER, 63, Dorset-street, Fleet-street.

IRON ROOFING WORKS, SOUTH- WARK.—JOHN H. PORTER, manufacturer of Iron Roofs and Buildings, Iron Hurdles, and other fences, and iron work generally. Lists of prices and estimates furnished upon application.—Office, 2, Adelaide-place, London-bridge, City.

LAP WELDED IRON TUBES.—W. H. RICHARDSON, Jun., and Co., MANUFACTURERS of every description of WROUGHT IRON TUBES for Locomotive and Marine Boilers, Gas, Steam, and other purposes.

PATENT TUBE WORKS, DARLASTON, STAFFORDSHIRE.

NAILS and IRONMONGERY from BIRMINGHAM.—To BUILDERS, ARCHITECTS, &c. —Nails, Locks, and every description of Builders' Ironmongery, of the best quality, supplied at the lowest Birmingham prices, by FREDERICK BLYTH, Patent Cut Nail Manufacturer and General Factor, Edmund-street, Birmingham. Lists of prices forwarded upon application.

IRON FOUNDRY, 9, Brick-lane, Old- street, St. Luke's.—J. J. JONES having made great additions to his STOCK OF PATTERNS, begs to inform the Trade, that he can now supply them with Plain and Ornamental Iron Columns, Girders, Railings, Gates, Iron Coping, Balconies, Window Guards, Verandahs, Ornamental Staircase Panels, Iron Staircases, Tomb Enclosures, Trellis Panelling, Lamp and other Brackets, Cantilevers, Newel Bars, Water Closet Work, Area Gratings, Fly and other Wheels, Wheel Plates, &c.

BAKER'S OVEN WORK, Forge Backs and Troughs, Rain Water Pipes and Gutters, Sash Weights, Furnace Bars, Stoves, Ranges, &c., always in stock.

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168, DRURY-LANE, and CHARLES-STREET, DRURY-LANE

JOSEPH GLOVER,

Solicits the attention of the Trade to his extensive Stock of PATTERNS for CASTINGS of EVERY DESCRIPTION, consisting of those for every purpose, either structural or ornamental.

Wheel Pinion and Steam-Engine Patterns; Range Stove and Hot Plate Metal.

A stock of Rain-Water Pipes, Plain and O G Guttering, Air Bricks, Sash Weights, &c. &c.

A very superior description of Soot Door, particularly suitable for internal work, being perfectly secure, and not unsightly.

ESTIMATES given for IRON ROOFING and every description of Ironwork, complete to specification, and the work executed with every attention to quality and dispatch.

GLOVER'S FOUNDRY,
168, DRURY-LANE, and CHARLES-STREET.

BURBIDGE and HEALY, 130, FLEET- STREET, LONDON, beg respectfully to inform the Building Public that they fit up COOKING ARRANGEMENTS for large Mansions, with patent appliances on scientific principles, which ensure greater economy and efficiency than hitherto attained. Also HOT WATER APPARATUS, upon improved and scientific principles, which they recommend for its peculiar safety for the Warming of Mansions, &c.

They fit up Laundries with Hot Water Apparatus, for Drying in a cleanly, expeditious, and safe manner. They also fit up BATHS with elegant arrangements, with every modern scientific improvement. Also Apparatus for the plentiful supply of Hot Water for Baths and general use of Mansions and large establishments.

CAMDEN TOWN.—R. FULKES'S RANGE and STOVE MANUFACTORY, 91, Park-street.

Elliptic Stoves, 3d. per inch. Register Stoves, 6d. per inch.
Self-acting Ranges, with Oven and Boiler and Revolving Shelves, 3 ft., 55s.; 3 ft. 6 in., 60s. Chimney Bars, 14s. per cwt.
Coppers, 1s. 2d. per lb. Sash-weights, 6s. 6d. per cwt.
Builders' Ironmongery of all descriptions equally low.

TO BUILDERS and CARPENTERS.— Elliptic Stoves, double backs, 3d. per inch. Registers, 6½d 7d., 8d. per inch.

Cottage Ranges, with Ovens and Boilers, 3 ft. 2 in., 40s.; 3 ft. 4 in 42s.; 3 ft. 6 in., 44s.

Self-acting Ranges, with Circular Oven and Back Boiler, best Wrought Bars and Bright Fittings,

3 ft., £3. 3s.	3 ft. 6, £3. 12s. 6d.	4 ft., £4.

Best Patent Cut Clasp.

4½d.	5d.	7d.	10d.	1s. 2d.	1s. 8d. per 1,000.
3d.	4d.	6d.	8d.	10d.	20d.

Best Sheet Floor Brads 13s. per cwt. Best Sash Line.
Best Town Glue 38s. Do. Scotch, 52s. per cwt.

Best Patent Sash Line.

4s. 3d.	5s.	6s. 6d.	7s. 6d.	10s.	12s. per gross.
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At F. R. WILLIAMSON'S IRONMONGERY and STOVE WAREHOUSE, 25, Chiswell-street, Finsbury-square.

Lists of Prices had on application at the Warehouse, or by letter pre-paid, inclosing postage stamp.

N.B Warehouse closes at Seven o'clock.

TO ARCHITECTS, BUILDERS, &c.

COPPER-WIRE CORD.—R. S. NEWALL and Co.'s PATENT IMPROVED COPPER-WIRE CORD for WINDOW SASH LINES, Hot-houses, Lightning Conductors, Hanging Pictures, Clock Cord, and various other purposes for which hempen rope has hitherto been used. This new and valuable Patent is fast superseding the use of the hempen cord, and is strongly recommended to all builders and other parties connected with the above. The Wire Cord may be had wholesale, and specimens seen at the office of the Patentees, No. 163, Fenchurch-street, W. T. ALLEN, Agent; or retail of G. and J. DEANE, 46, King William-street; E. PARKS, 149, Fleet-street; T. JONES, 62, Charing Cross, and GIBBONS and CO., 345, Oxford-street; also of all respectable Ironmongers.

GALVANIZED IRON FOR ROOFING, &c.—The Galvanized Iron Company beg to direct the attention of architects, surveyors, builders, and others, to their Patent Galvanized Iron, which is peculiarly adapted for ROOFING and BUILDING PURPOSES, especially for Tropical climates, being cheaper and more durable than zinc, lead, tin, or any other metal, calculating weight and strength. This fire-proof material has been used for roofing the new Houses of Parliament, shipbuilding and timber sheds in her Majesty's dock-yards of Deptford, Woolwich, Chatham, and Portsmouth; and at many of the principal Railway stations, gas works, &c. &c. This material is also admirably adapted for the construction of conservatories, fire-proof buildings, chain and wire rope bridges, corrugated doors, shutters, &c. &c. Specimens may be seen, and every information obtained at the Offices of the Company, No. 3, Mansion House Place, City—London. Works at Millwall, Poplar, Middlesex; Broad-street, Birmingham; Cobyn's Hall, near Dudley.

FIRE-PROOF DWELLING-HOUSES, &c. —This important desideratum is secured by the use of Dr. FOX'S PATENT FIRE-PROOF FLOORS and CEILINGS, which are applicable to private houses generally, as well as to all descriptions of public buildings, warehouses, manufactories, &c. The attention of the public is solicited to this valuable invention, by the use of which the ravages of fire are effectually prevented, while the expense does not exceed that of the ordinary mode of construction; and the proprietors of the Patent are prepared to furnish every information and assistance requisite for its adoption, and to guarantee its successful application to old as well as to new buildings.—Further particulars may be obtained on application to the Proprietors, Messrs. FOX and BARRETT, Leicester Chambers, 46, Leicester-square.